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FAIR CANADA.

By A. H. WINGFIELD.

Let others sing of sunny climes,
Of lands beyond the sea ;
There's not a dearer spot on earth
Than Canada to me.

Dear Canada, loved Canada,
Wherever I may be,
There's not a land on all the earth
Shall win my heart from thee.

The Red Cross flag our fathers raised,
We hail it as a friend ;
And should that flag e'er be assailed
Its glories we'll defend.

Fair Canada, brave Canada,
No land on earth more free ;
And his would be the coward's arm
That would not strike for thee.

The Scot may boast his heather hills,
The Englishman his rose ;
And Erin's sons may love the vales
Where Erin's shamrock grows

But Canada, loved Canada,
Is dearer far to me ;
No other land, however grand,
Shall win my heart from thee.

The sun that tints her maple trees
With nature's magic wand
Shines down on peaceful, happy homes,
In our Canadian land.

Fair Canada, loved Canada,
My heart is wed to thee :
By thou the land of noble deeds,
And Empire of the free.

CANADA:

A MEMORIAL VOLUME.

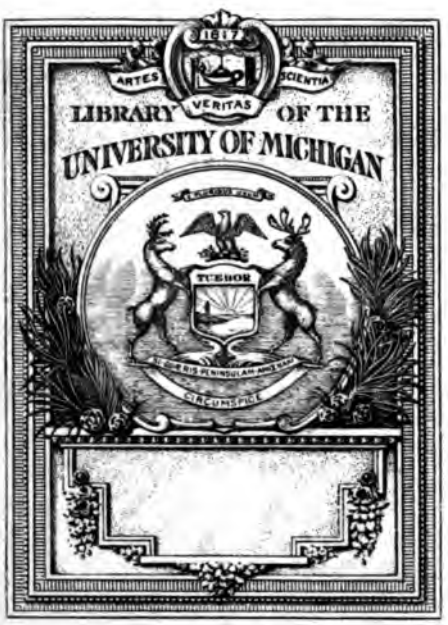


GENERAL REFERENCE BOOK ON CANADA; DESCRIBING THE DOMINION AT LARGE, AND ITS VARIOUS PROVINCES AND TERRITORIES; WITH STATISTICS RELATING TO ITS COMMERCE AND THE DEVELOPMENT OF ITS RESOURCES.

MAPS AND ILLUSTRATIONS.

PRICE: $3.

E. B. BIGGAR, Publisher,
MONTREAL.
1889.


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PREFACE.

The object of this work is to give such a description of the various provinces and territories of Canada that the world may realize, more fully than it has yet been able to do, the progress this Dominion has made politically, commercially and industrially, and the unmeasured expanse of power, wealth and happiness to which its people seem destined to attain in the nearing age. Such a book of reference is more particularly demanded, because of the interest now taken in Canada by people of other countries—an interest due, among other causes, to the recent achievement of great public works of an international character, the latest of which is the establishment of direct steamship connection with China and Japan with a line in course of formation to Australasia; to the opening up for settlement of new regions continental in their character; and to the springing up of new streams of foreign trade as a result of the great Colonial and Indian Exhibition in London, where, under the masterful management of Sir Charles Tupper, our able High Commissioner for Great Britain, Canada made such a profound impression.

The first 160 pages are a reprint of the excellent handbook recently published by the Dominion Government, this portion of the work being from the able pen of Mr. George Johnson, chief statistician at Ottawa. The tables and statistics of this part are brought down to the end of the fiscal year 1888 in an appendix by the present compiler. This includes an account of the principal steamship and railway systems of Canada, a chapter on "Longevity in the Maritime Provinces, etc."

Following the general description of Canada is an account of each province, giving a sketch of their various educational systems, their provincial and municipal governments, their physical features, trade, commerce, manufactures, agri-

culture; mineral, marine, timber and other resources, with miscellaneous facts and figures. These are prepared either by the provincial governments or by the publisher, from information from official sources. A special section is devoted to a description of the North West Territories, the great Mackenzie Basin—whose vast expanse and illimitable natural resources are just beginning to loom up like a new world before the Canadian pioneers in their onward march over the great North West—and the immense and still less explored region around Hudson Bay.

Following the description of the various provinces and territories is a sketch of some of the leading cities and towns of Canada. To give a sketch, however brief, of every town in Canada would have made this volume (already comprising nearly 1000 pages) too bulky, and these cities and towns are therefore given as samples of what Canadian cities and towns are, and how they have advanced. Whatever may be said of other cities and towns, those here described certainly present many attractions and show a most creditable record.

In this last section some account is rendered of Canadians abroad; Mr. Erastus Wiman pays his splendid tribute to Canada, the land of his birth; and a sketch is given of the Island of Newfoundland, which it is to be hoped may one day form part of this great Dominion of the North.

Besides the "Tables of Contents" of provinces, the reader is referred to the general index at the back of the book.

When the reader has perused these pages, he will see with every Canadian patriot that there lies outstretched before this Dominion a vista of sublime moral, political and material power such as God has bestowed upon no people on earth, and that upon ourselves depends whether we realize this vision in our national life.

E. B. BIGGAR

MONTREAL, June, 1889.

ERRATA.

Page 27, *Error re* first printing press—see p. 50 sect. X.
" 35, 12th line from top 1872, *should be* 1873.
" 36, 1st line, 3rd paragraph, *should be* 215.
Page 40, for changes in administration of N.W.T., *see sect. VIII.*
" 42, 7th paragraph — Department of Indian affairs was transferred to *Minister of Interior* 1887.
" 71, "receipts in excess of expenditure" 1868, *should be* $201,835; for 1870, *should be* $1,166,717; for 1877, excess of expenditure *should be* $1,460,028.
" 85, 5th line from top 988, *should be* 1151.
" 99, 6th line from bottom, cost of canal system *should be* $48,201,300.
" 126, last line, 4th paragraph, *should be* 1844.
" 139, 7th line from bottom, *should be* 1886.
" 160, last line—"British" *should be* omitted.
" 179, last line £59.1s, *should be* £95.1s.
" 180, total number of banks in Canada, *should read* 42.

By changes in the postal law, made in 1889, letters are carried to places in Canada and United States at the rate of 3cts for *one* ounce instead of 3cts. per half ounce.

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Map of New Brunswick—beginning of section III.
Map of Tobique River,—section III, p. 85.
Map of Ontario,—beginning of section VI.
Maps of Mackenzie Basin,—in section VIII.
Map of British Columbia,—beginning section IX.

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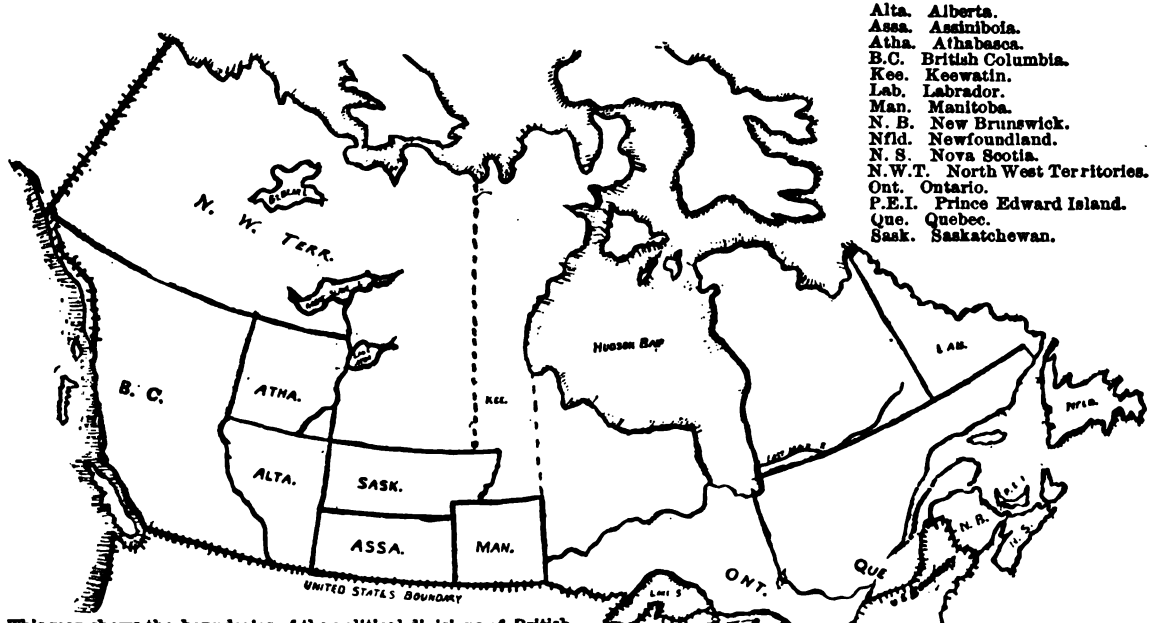
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SECTION I.

DOMINION of CANADA.

OUTLINE MAP OF POLITICAL DIVISIONS OF BRITISH NORTH AMERICA.



Alta. Alberta.
Assa. Assiniboia.
Atha. Athabasca.
B.C. British Columbia.
Kee. Keewatin.
Lab. Labrador.
Man. Manitoba.
N. B. New Brunswick.
Nfld. Newfoundland.
N. S. Nova Scotia.
N.W.T. North West Territories.
Ont. Ontario.
P.E.I. Prince Edward Island.
Que. Quebec.
Sask. Saskatchewan.

This map shows the boundaries of the political divisions of British North America as they now exist. All these divisions are comprehended in Canada, except Labrador and Newfoundland. This year the northern boundary of Ont. has been extended to Hudson Bay and the Albany R. to its mouth. The Dominion Government consent also to the extension of Quebec north to H. B. and latitude 52, as marked; but, as the Provincial Government want the East Main R. as the Northern limit, this question is not settled. Keewatin, though territorially a district, has as yet no local government.



CANADA.

I.

CLIMATE.

The British Empire has an area, roughly speaking, of 9,000,000 square miles, of which one third is in North America, one third in the Antipodes, one sixth in the temperate zone of Europe and Asia, and one sixth within the tropics. If one portion of this great empire, enclosing within its ample bounds a fifth of the globe, has been decried because of its intense heat, and another on account of its aridity, Canada can claim to be the greatest sufferer of all from its association in the popular mind with intense cold; "Siberian" and "Canadian" having long been interchangeable terms to denote the utmost severity of cold. The furs which have been distributed throughout England for generations from many a Canadian stream, forest or plain, the possession of one side of the north pole, and the ownership of the snow-capped Rocky Mountains, have contributed to give Canada an Arctic name and a hyperborean reputation by no means in accordance with actual facts.

When the French monarch signed the treaty which transferred Canada to Great Britain, he sought to lessen the importance of his rival's acquisition and to diminish the degree of the sacrifice the French nation was called upon to make, by exclaiming, while he signed, "after all, it's only a few square miles of snow." In official circles the expression found acceptance, and down to a comparatively recent date the French King's estimate continued to be the belief of the best informed in Europe. Not very many years ago an eminent English statesman referred to Canada as "those huge ice-bound deserts of North America;" while the geographies of the schools and the encyclopedias of the libraries have invariably represented Canada as doomed in great part to eternal sterility from the severity of its climate.

The expeditions sent to the north pole have had much to do with the continuance of those strange misconceptions which have persistently retained their position among the "facts" relating to Canada's climate. According to Parry, the cold of Melville Island was so intense that hot water allowed to fall from the topmast reached the deck as hail; mercury could be fired as bullets from fowling pieces, and balls of frozen almond oil when fired at planks pierced them and fell to the ground unbroken.

Many other similar accounts have been published by veracious navigators respecting the Arctic slope of the Dominion, and these have been applied by a sweeping generalization to the whole country till intensity of cold has been burned into the average European mind as the most striking characteristic of Canada.

Agents of railway companies in the states and territories south of the international boundary line have striven to perpetuate the notion that the climate of Canada is against the country's future. Not long ago, the Canadian department of agriculture found that there had been distributed, throughout England, thousands of pamphlets in which it was asserted, with the proper quantum of hypocritical lamentation, that the climate of Manitoba consists of "seven months' Arctic winter and five months' cold weather;" the object in scattering the statement being to attract intending settlers from Manitoba to Dakota as possessing a better climate.

It can no more be denied that there are regions of Canada where the frost never leaves the ground, than it can be denied that there is a great American desert, stretching for several degrees of latitude between the Gulf of Mexico and the international boundary; but the Dominion of Canada is so vast in extent that one part may be charged with perpetual snow while another is bathed in almost perennial heat and sunshine. One part receives the cold atmosphere of the "Frozen Sea," another the humid air of the Atlantic, another the mild genial breezes of the Pacific, and still a fourth has the surface of its soil baked by the heat of tropical waters. In the extreme northern parts, vegetation is so stunted that the highest tree does not reach a child's knee; in the southern parts, vegetation is so luxurious, that fruits and flowers grow with as much vigor as in Italy or the south of France.

Between these great extremes, all the cereals, grasses and flowers of temperate regions are found, and as we proceed northwards or southwards we meet an unbroken gradation of vegetation. This country has, in fact, all the climates of Europe from the Mediterranean to the Arctic Ocean; as might be expected, seeing that it extends from the latitude of Rome, in Italy, to that of North Cape in Norway, and is of almost equal area.

Climate is an extremely complex matter and one that depends on a singular variety of conditions. Of these, the most manifest and inclusive are heat, rain, cloud, wind and electrical condition. They are, to a certain extent, dependent on each other, but ultimately they may be traced back to certain general causes, viz: 1st, position in latitude; 2nd, size and form of land; 3rd, elevation above the sea; 4th, form, position and elevation of neighbouring land; 5th, nature and temperature of the nearest marine currents; 6th, position, distance and direction of the nearest continent.

These points have all to be fully studied, as much in dealing with the climate of Canada as in discussing that of any other country. It is clear that climate is not a question of latitude and longitude; that the South is not necessarily warm and the North, cold; that the East wind does not always bring rheumatism; that the South wind need not be hot, or the Southwest be accompanied by rain.

The very great differences in climate in England, comparatively small in extent as Great Britain is, should warn persons against forming one general conclusion as regards the climate of so vast a country as Canada. The climate of Bath and that of Torquay are well known to differ essentially, and even the two small islands of Jersey and Guernsey, not much more than twenty miles apart, are extremely different as regards climate.

One good result has come from the long-endured slandering of our Canadian climate; great attention has been given to meteorological investigations. The study of the science of climate has been stimulated by the determination of Canada to present *facts* in place of assertions and wanton aspersions. The Dominion Government has ten chief weather stations; 23 first-class stations reporting to the central offices by telegraph: 38 first-class, and 69 second-class stations. There are 38 storm signal stations, 12 stations at which self-registering sunshine records are maintained,

and 135 rain, snow and weather stations. In all, there are 292 places of observation reporting to the central office. These are distributed throughout the Dominion, 44 being on the Atlantic coast, 136 in the basin of the St. Lawrence, 105 between Rainy Lake and the Rockies, and 7 on the Pacific Ocean slope. In these the agents of the Canadian Government are engaged studying daily, and almost hourly, the climate of the country at stations as widely apart as the most easterly point of the southern shores of Hudson Straits, and Victoria in Vancouver Island. The records of the Hudson Bay forts have been searched for "weather notes." The narratives of travellers have been closely scanned for references to the climate.

From all these sources there is abundant evidence that Canada, climatically considered, is a country well fitted for Europeans.

Time has amply justified the conclusions of Malte Brun, "that Canada and the other British possessions in North America (now forming the Dominion), though apparently blessed with fewer physical advantages than the States to the south, contain a noble race, and are evidently reserved for a lofty destination. Everything there is in proper keeping for the development of the combined physical and mental energies of man. There are to be found at once the hardihood of character which conquers difficulties, the climate which stimulates exertion, and the natural advantages which reward enterprise. Nature has marked out this country for exalted destinies."

No one particular in her category of advantages is more effective as an instrument to enable Canada to take the position thus declared, by an eminent authority, to be her's in the future, than her climate.

Taking the conditions referred to as the true guides to climate, we find that a large portion of Canada is in latitudes which in Europe have proved the most favorable to the health of man. The mean temperature of the regions watered by the Moose and Abbitibi Rivers corresponds with the north of Europe, being 65° F. The regions drained by the northern part of the Ottawa and by the Saguenay, and the northern parts of Nova Scotia correspond with the south coast of England, Paris, the middle of Germany, and the south of Russia, being 60° F., while 65° F. represents the summer temperature of the regions bordering upon the Upper St. Lawrence Lakes, London, Toronto,

Kingston, Montreal, the St. Lawrence to Quebec, and eastwards to Fredericton, the capital of the province of New Brunswick.

Altitude more than latitude makes climate, and in this respect Canada occupies a position superior to most regions. According to Humboldt, Europe has a mean elevation of 671 feet, South America of 1,132, Asia of 1,151, and North America of 748 feet. The Canadian part of North America is placed at 300 feet.

The ascent from the ocean to Lake Superior does not average more that six inches in a mile, and even this ascent is not markedly noticeable till we proceed westward. Montreal, the head of ocean navigation, reached only after passing over several hundred miles of fresh surface water, is at low water but eighteen feet above the level of the sea, as it rolls under the lighter fresh water along the bed of its estuary.

The marine currents are singularly favourable to Canada. Along the Atlantic coast, the Gulf Stream exerts its benign influences to such an extent that on Sable Island there are troops of wild ponies, the progenitors of which, two centuries ago, were shipwrecked and cast upon the island, and there, successive generations, without shelter of any kind, have lived and multiplied. In Halifax, in the depth of winter, a dozen hours of south wind will mow down the snow-banks, as a mowing machine cuts down the ripened grass.

Along the Canadian littoral of the Pacific Ocean the Japanese current produces the same effect on the climate as the Gulf Stream does in England. Vancouver Island is like the south of England, except that it has a greater summer heat with less humidity. In the vicinity of Victoria the highest temperature in the shade in July and August ranges from 80 to 90° F., while the thermometer in winter, seldom goes as low as 22° below freezing point. As respects the ocean currents it may be said that they make a difference in the regions affected by them of 10° of latitude.

East of the Rockies, Professor Macoun found a large area which had been previously described by travellers as the apex of the great American desert. He concluded after investigation that this region was not naturally sterile soil, but a dried and baked surface caused by influences operating for ages, the chief of which was the heat of the Gulf of Mexico borne by the winds therefrom, and losing their moisture while passing over the

heated sand plains lying between the Gulf and Canada. Acting upon his conclusion he made an experiment, subsequently tried on a large scale by the managers of the Canadian Pacific Railway. The ground was broken up, and beneath the hardened surface was found a soil possessing in the highest degree the constituent elements of the best soil. It had been hermetically sealed, and thus prevented from wasting its sweetness on the desert air. The same influence, having its source in the Gulf of Mexico, combined, according to some observers, with the Chinook winds, operates upon the climate of that region—the ranching ground of Canada. In the district of Alberta, the winter climate is comparatively mild, not severe ; blizzards are unknown, and stock winter in the open air and come out fat and in good condition in the spring. The Government statistics show that there are now fifty-one ranches in which stock has been placed ; that they vary in size from 1,500 to 100,000 acres and have a combined area of 1,693,670 acres. The number of cattle on them is 46,900, of horses, 4,310, of sheep, 9,694, of other animals, 895. Besides these, there are considerable numbers of cattle on grounds not held as ranches by lease from the government. The reports from all are favourable as to the future, speaking well for the climate in mid-winter.

The great bodies of water which are a distinguishing feature of Canada also exert considerable influence upon the climate.

Hudson's Bay is 1,000 miles long by 600 wide. Its temperature is 65° F. during summer; in winter, it is 3° warmer than the waters of Lake Superior. The chain of fresh water lakes, which, almost without a break, extends between latitude 44·45 and latitude 51 north, and from longitude 75 to longitude 120, covers, together with the smaller lakes, an area of 130,000 square miles and contains nearly one half of all the fresh water on the surface of the globe. The moderating influences of these large bodies of water, which never freeze over, will be at once recognized.

In the older settled portions of Canada the undoubted experience is, that the climate has been modified by the decrease of the forest area and the draining of swamp lands. Malte Brun says " the same changes, as to climate, are taking place in Canada which were observed in Europe when the dark masses of the Hercynian forest were felled and its morasses drained by the laborious arms of the Germans, and the climate, becoming more

mild, has undergone a change of 8° to 10° on the average, since the efforts of European industry were first applied to the cultivation of the country."

The number of centenarians, especially among the Canadians of French descent, whose ancestors for ten generations have lived and died in Canada, attests the suitability of the climate to the European races; as also do the facts that the weight of children at birth, and the size at twenty-one years, are far above the average of Europeans.

During the insurrectionary movement in the Canadian Northwest, in March 1885, men and boys were marched from the Niagara peninsula, and from all the cities between London and Halifax, without any special selection. Five thousand troops, with another thousand employees of various kinds, travelled in open box-cars over the Canadian Pacific Railway, marched across the "gaps" in the then incompleted railway, and trudged through snow and slush by forced marches northwards from three points on the railway hundreds of miles distant from each other. They slept in tents, without taking any extraordinary precaution as regards health. Yet of the six thousand, during months exposed and going as far north as the 53rd parallel, not one man died from any disease traceable to the climate. There was complete immunity from disease.

But, says some one, "while this is all true as regards the effect of the climate on human life, is it not a fact that vegetable life suffers? Is it not a fact that throughout the whole of Canada, while the mean temperature is equal to that of Europe, there are summer frosts which seriously diminish the chances of success for agricultural operations?

This question has also been made the subject of careful investigation.

Sir George Simpson says the vine is abundant on the Kaministiquia River, a tributary of Lake Superior from the north west, where also the tomato has been found growing wild. He also states that, in his day, buffaloes roamed in countless herds in the region watered by the Saskatchewan. "The grass to feed them," says Sir George, "is rich and abundant, and the buffaloes winter there, together with the domestic animals taken thither for the use of the white man and the Indian."

Professor Macoun found the cucumber ripening in the Peace

River district in August. In the valley of the Ottawa the grape flourishes, and the census returns show that the yield of grapes in Ontario for the year 1880 was 3,896,508 pounds. If you look through the exhibits from Canada, you will find apples, pears, peaches, and other fruit, which suggest a fine climate, better for such fruit than that possessed by any other part of "Greater Britain," and, if the price paid for Canadian apples in the London market is good evidence, better than any part of the United States.

There is, beyond question, one drawback which, in the North-western territories of Canada, though not to so great a degree as in the Western States to the South, makes the mean temperature of the summer lower than it would otherwise be, and at the same time destroys, to a certain extent, the accuracy of the deductions made from that mean temperature. That drawback is the occurrence in occasional years of a summer frost. Upon the fact of this occurrence, interested persons have commented on the climate for wheat raising. The experience of the early settlers in Ontario was similar to that of the early settlers in Manitoba. We never hear now of this as an objection to Ontario. Already in the Prairie Province early planting has to a very considerable extent overcome the objection, as the wheat reaches in such event a period in its growth which enables it to withstand the sudden lowering of the temperature. The hard Fyfe wheat has been the most successful seed, and it appears to be settled beyond question that if the seed had, in the first place, been obtained direct from Scotland, instead of from Ontario where it had been used for years and had probably undergone some changes in its properties, the success would be all that could be desired. The introduction of Northern Russia wheat has been suggested. At any rate, with a splendid soil—an alluvial black loam with an average depth of twenty inches, resting on a sub-soil of clay, —with an average yield of twenty-eight bushels to the acre, and with practically eight days in the week, owing to the length of time the sun is above the horizon in those higher latitudes, it may be counted a certainty that the energy and enterprise of the people will ere long succeed in overcoming the one difficulty in the successful raising of wheat that has been experienced—a difficulty moreover which only in occasional years presents itself. The exhibits of Manitoba wheat will speak for themselves as to quality; the surplus of last harvest, equal to 5,500,000 of bushels,

will show to the people of the motherland that Canada is destined to take high place among the world's wheat growers, whose crops, gathered in various zones for the use of the inhabitants of the British Isles, supply the deficit of 130,000,000 of bushels experienced year by year in the island-home of the world-empire of Britain.

The following table gives the average summer and yearly temperature at stations in the Dominion of Canada, with the latitude, longitude and height above the sea. The temperatures are derived from ten years' observations, whenever practicable:—

ATLANTIC SLOPE.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Georgetown	46 11	62 35	100	61·2	40·9
Charlottetown	46 14	63 10	38	62·2	40·7
Kilmakumaig	46 48	64 2	20	61·2	39·2
Grand Manan	44 42	66 48		58·8	42·0
Point Lepreaux	45 4	66 27	45	55·5	39·5
St. Andrew's	45 5	67 4	36	60·1	41·2
St. John	45 17	66 3	150	58·4	40.3
Dorchester	45 55	64 32		58·2	38·6
Fredericton	45 57	66 38	59	62·1	39·7
Bass River	46 30	65 15	70	60·7	38·3
Chatham	47 3	65 29	50	61.3	38·4
Bathurst	47 39	65 42	35	63·2	39·6
Dalhousie	48 4	66 22	45	59·4	36·1
Yarmouth	43 50	66 2	61	58·5	42·8
Liverpoo	44 2	64 42	30	62·7	.....
Digby	44 38	65 46	150	60·8	43·8
Halifax	44 39	63 36	122	61·5	42·5
Windsor	44 59	64 6	87	62·2	42·7
Truro	45 22	63 18	77	60·4	40·8
Antigonish	45 38	61 59	.....	61·4	40·8
Port Hastings	45 39	61 24	.....	61·3	41·8
New Glasgow	45 41	62 39	.....	62·4	41·5
Pictou	45 42	62 41	.....	62·3	41·2
Baddeck	46 6	60 49	25	61·0	41·1
Sydney	46 8	60 10	28	60·3	41·1
Glace Bay	46 12	59 58	34	59·7	40·5
Guysborough	45 23	61 29	.....	61·6	40·6

The above are in the provinces of Prince Edward Island, Nova Scotia and New Brunswick.

St. Lawrence Basin.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Huntingdon	45 5	74 10	.....	63·6	41·1
Brome	45 12	72 34	.....	62·6	40·0
Richmond	45 40	72 12	437	61·9	39·8
Sherbrooke	45 35	72 10	.....	59·6	36·8
Danville	45 47	72 1	.....	61·8	39·4
St. Francis	46 13	70 48	.....	60·9	38·9
Cranbourne	46 22	70 37	.....	58·6	36.4
Montreal	46 31	73 33	187	65·5	42·1
Quebec	46 48	71 12	312	62·3	38·6
Chicoutimi	48 25	71 5	150	60·5	36·6
Father Point	48 31	72 1	20	54·7	35·0
Cape Magdalen	49 16	65 20	.....	56·1	34·8
Anticosti, S. W. P	49 24	63 36	20	54·7	34·6
Belle Isle	51 58	55 22	405	49·6	28·4
Cape Norman	51 38	55 54	.....	52·5	31 8
Cape Rosier	48 52	64 15	39	55·6	34·5

The above are stations in the province of Quebec.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Point Pelee	41 50	82 38	580	70·5	48·4
Windsor	42 19	83 2	599	69·0	48·2
Port Stanley	42 40	81 13	502	66·1	45·4
Stoney Creek	42 40	79 43	.....	65·1	45·3
Aylmer	42 45	81 0	.....	63·7	42·8
Glencoe	42 45	81 43	.....	65·7	44·3
Port Dover	42 47	80 13	635	66·1	45·4
Simcoe	42 50	80 21	700	66·7	46·2
Fort Erie	42 53	78 56	.....	65·8	45·4
Welland	42 59	79 17	580	65·8	45·4
Strathroy	42 59	81 42	.....	65·1	44·3
Sarnia	42 59	82 24	.....	63·5	43·4
London	43 00	81 15	816	66·0	45·2
Ingersoll	43 2	80 57	.....	64·1	42·8
Birnam	43 2	81 55	.....	63·6	42·4
Niagara S	43 6	80 6	.....	64·1	.....
Woodstock	43 8	80 47	980	64·3	43·8
Brantford	43 10	80 21	750	67·2	45·1
Granton	43 12	81 21	1015	63·6	43·6
Hamilton	43 16	79 53	350	68·2	47·0
Dundas	43 22	79 59	.....	66·5	45·7
St. George	43 23	80 17	.....	64·0	41·1

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet	°	°
Stratford	43 23	81 0	1182	63·9	43·1
Galt	43 23	80 29	870	64·8	44·2
Conestogo	43 33	80 31	.....	63·1	41·4
Guelph	43 33	80 16	.....	64·7	44·4
Gravenhurst	44 54	79 20	.....	62·7	41·0
Bancroft	45 1	77 50	.....	58·5	38·0
Cornwall	45 1	74 43	175	65.2	42·3
Beatrice	45 8	79 20	.....	60·9	39·1
Parry Sound	45 19	80 0	641	62·9	41·2
Renfrew	45 26	76 39	.....	61·6	.....
Huntsville	45 30	79 8	.....	61·8	37·0
Fitzroy Harbor	45 30	76 14	200	64·7	40·9
Ottawa	45 26	75 14	230	65·2	40·5
Spencedale	45 33	79 22	.....	60·5	35·2
Manitowaning	45 41	81 49	.....	62·5	42·5
L'Orignal	45 41	74 42	.....	62·4	40·3
Joly	45 42	79 10	.....	58·3	.....
Pembroke	45 50	77 7	389	64·6	41·0
Little Current	45 57	81 54	608	63·4	39·5
Rockliffe	46 12	77 55	418	61·9	38·6
Manamise	47 30	84 50	.....	56·8	35·5
Port Arthur	48 27	89 12	642	59·9	36·2
Kalmar	49 45	94 58	.....	62.0	34·7
Moose Factory	51 16	80 56	30	57·8	30·6
Marten's Falls	51 30	86 30	.....	55·1	25·9
Pickering	43 39	78 56	.....	64·6	43·9
Toronto	43 39	79 23	350	65·1	44·5
Brampton	43 41	79 46	710	66·2	44·4
Elora	43 41	80 24	.....	61·0	41·0
Goderich	43 45	81 43	728	65·9	45·2
Thornhill	43 45	79 23	.....	61·5	42·8
Oshawa	48 53	78 52	.....	62·0	42·1
Mount Forest	43 58	80 44	1376	64·6	42·2
Egremont	44 0	80 5	.....	61·7	40·4
Newmarket	44 2	79 27	.....	63·1	42·2
Point Clark	44 5	81 41	587	64·2	44·0
Port Perry	44 6	78 56	.....	66·8	45·8
Trenton	44 8	77 29	.....	64·3	41·5
Durham	44 10	80 50	1450	61·3	39·4
Belleville	44 10	77 23	321	67·3	44·3
Desoronto	44 11	77 4	272	64·8	42·6
Kincardine	44 11	81 37	684	64·6	44·0
Kingston	44 14	76 29	307	66·5	44·2
Peterboro'	44 17	78 18	668	66.9	44·6
N, Gwillemburg	44 19	79 18	480	66·5	44·0
Norwood	44 22	77 59	639	63·9	43·4
Barrie	44 23	79 40	768	65·1	43·2
Lakefield	44 25	78 15	.....	63·3	41·7
Stayner	44 25	80 4	714	61·6	42·4
Saugeen	44 30	81 21	656	62·8	42·8
Owen Sound	44 30	80 55	.....	63·3	42·3
Brockville	44 35	75 42	273	64.9	41·8
Penetanguishene	44 45	79 56	725	63.4	41·9

The above are *stations in the province of* Ontario.

Prairie Region.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Emerson	49 1	97 13	784	61·5	40·7
Sourisford	49 8	101 0	.....	57·8	33·1
Oak Lake	49 45	100 35	1386	57·0	30·8
St. Boniface	49 50	97 6	.....	59·4	31·9
Brandon	49 50	99 50	.....	58·1	30·1
Winnipeg	49 55	97 7	758	60·8	32·9
Poplar Heights	50 4	97 47	.....	61·5	34·5
Stony Mountain	50 5	97 12	803	60·9	33·7
Rapid City	50 7	100 0	.....	62·2	34·3
Minnedosa	50 14	99 47	1710	56·4	29·5
Gimli	50 37	96 58	723	58·9	31·8
Russell	50 50	101 21	.....	54·7	28·9
Hillview	? ?	?	.....	58·0	.....

The above are stations in the province of Manitoba.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	
Fort Walsh	49 42	109 51	.....	56·0	.....
Fort McLeod	49 39	113 20	.....	62·1	26·1
Medicine Hat	50 5	110 30	2136	60·7	39·6
Regina	50 25	104 35	.....	56·5	27·6
Qu'Appelle	50 44	103 42	2115	54·8	30·0
Gleichen	50 50	112 55	.....	56·4	.....
Calgary	51 2	114 40	3389	53·4	.....
Parkland	51 15	103 20	.....	55·1	.....
Pheasant Forks	51 45	101 30	.....	53·3	.....
Swan River	51 52	101 57	.....	58·7	.....
Battleford	52 41	108 27	1620	60·0	35·7
Edmonton	53 35	113 30	2253	57·2	31·7
Stuart's Lake	54 11	124 4	1800	54·2	38·8
Fort Dunvegan	56 0	118 20	.....	52·3	28·8
Slave Lake	55 20	115 0	.....	54·6	.....
York Factory	57 0	92 26	55	51·9	20·2
Fort Chipewayan	58 43	111 19	.....	53·5	23·9
Fort Rae	62 40	115 10	.....	54·0	20·9

The above are stations in the N. W. Territories.

PACIFIC SLOPE.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	′	° ′	Feet.	°	°
Esquimalt	48 26	123 27		57·3	48·8
Victoria	48 25	123 30		56·6	47·4
Ladner's Landing	49 6	123 4		57·9	45·9
New Westminster	49 12	122 53	33	60·6	48·1
Spence's Bridge	50 25	121 30	760	67·6	47·5
Lillooet	50 42	122 2		63·8	44·0

The above are stations in the province of British Columbia.

II.

THE EXTENT OF CANADA.

A recent decision of the Judicial Committee of the Privy Council partially settles the north-western boundary of Ontario, leaving still unsettled the limits of the provinces of Ontario and Quebec to the north. In the event of an arrangement carrying the bounds of these two provinces to James' Bay, the great Mediterranean sea of Hudson's Bay would become the centre around which cluster four of the inland provinces of Canada. Four others of the provinces, into which, for local government purposes, Continental British North America is divided, are also maritime, viz., Nova Scotia, New Brunswick and Prince Edward Island on the east or Atlantic coast of Canada, and British Columbia on the west or Pacific coast.

Thus of the eleven provinces and provisional provinces into which Canada is divided, Manitoba, Alberta, and Saskatchewan alone would be without a seaboard.

The possession of Hudson's Bay and the apportionment of its coast among so many of the inland provinces give all parts of the Dominion one great interest in common—the maritime interest; bestowing on Canada at the same time greater homogeneity of interest with the rest of the British Empire than would at first thought seem to belong to her.



Hudson's Bay is connected with the North Atlantic Ocean by Hudson's Straits, which are 600 miles long by 50 wide, in the broadest part.

Canada stretches from this great centre in every direction. To the south and south-east there is the great WOODLAND REGION, comprising the provinces of Ontario, Quebec, New Brunswick, and Nova Scotia, in which, for a couple of centuries, the forests have been attacked by armies of Lumbermen hewing down the trees for export and home use, or clearing the ground for agricultural pursuits.

To the west and south-west lies the vast PRAIRIE COUNTRY, comprising Manitoba and the four provisional provinces of Keewatin, Alberta, Saskatchewan, and Athabasca.

To the north-west lies the Peace and Mackenzie Rivers district; while beyond the prairie region, stil further west, is the MOUNTAIN REGION of Canada, embracing the Rockies, the Selkirk, and the Gold ranges of mountains.

From the 85th degree of longitude the country stretches west to the 130th degree; and east to the 42nd; 45 degrees on the one side, and 43 on the other.

North and south, the country stretches from the 51st degree of latitude, south to the 42nd, and north to the Frozen Sea.

Speaking generally, this country is divided into the basin of Hudson's Bay and those of the St. Lawrence, the Peace, the Mackenzie and the St. John Rivers, and the two slopes of the Atlantic and Pacific Oceans.

The basin of the Hudson Bay is the largest, being 2,000,000 square miles in extent. The St. Lawrence basin covers 530,000 square miles, of which 70,000 are in the United States. The Mackenzie basin has an area of 550,000 square miles. The St. John basin and the Atlantic slope together have an area of 50,214 square miles, and the Pacific slope one of 341,305 square miles.

Altogether, not including the area covered by the great lakes, there are 3,470,392 square miles, or about 40 per cent. of the area of the whole British Empire.

It is difficult to convey any adequate conception of the vastness of the country. England, Wales, and Scotland together form an area of 88,000 square miles. You could cut forty such areas out of Canada. New South Wales contains 309,175 square miles, and

is larger by 162 square miles than France, Continental Italy, and Sicily. Canada would make eleven countries the size of New South Wales. There are (in extent) three British India's in Canada, and still enough left over to make a Queensland and a Victoria. The German Empire could be carved out of Canada and fifteen more countries of the same size.

The plains of the Saskatchewan measure 500,000 square miles, and, according to Lord Selkirk, who attempted colonization, are capable of supporting thirty millions of people. A European area similarly situated east of the tenth degree of longitude would comprehend very nearly the whole of England and Ireland, part of the German Ocean, the English Channel, the north-eastern corner of France, the whole of Belgium and Holland, and the greater part of the valley of the Rhine.

The drainage system of Canada is on the same extensive scale as the country itself. The valley of the St. Lawrence penetrates the continent by a navigable route to a distance of about 2,000 miles from the ocean. The rivers which flow eastward into Hudson's Bay have their sources in the Rockies, 1,500 miles distant from their mouths. The northward flowing rivers have a length of 1,200 miles. The great lakes in the St. Lawrence form the largest and purest body of fresh water in the world, with an area of 90,000 square miles, a depth of from 200 to 1,000 feet, and with elevations varying from 200 to 600 feet above the ocean level. The following are statistics respecting these lakes:—

Lakes.	Length Miles.	Breadth Miles.	Depth. Feet.	Elevation. Feet.	Area in sq. miles.
Superior	420	170	1,000	600	31,500
Michigan	320	70	700	576	22,400
Huron	280	105	1,000	574	21,000
Erie	240	57	200	565	9,000
Ontario	180	55	600	235	5,400

The lake system of the prairie region is low in altitude, covers an area of over 13,000 square miles, and is as follows:—

Lakes.	Length.	Breadth.	Elevation.	Area, square miles.
Winnipeg	280	57	710	8,500
Manitoba	120	24	752	1,900
Cedar Lake			770	312
Dauphin			700	170
Winnipegosis	120	27	770	1,936

The four principal rivers of the eastern, northern, and western watersheds of Canada are:—

	Length in miles.	Drainage area in square miles.
St. Lawrence	1,500	330,000
Saskatchewan and Nelson	1,500	450,000
McKenzie	1,200	440,000
Fraser	450	30,000

III

HISTORICAL SKETCH OF CANADA.

There is so much that is unique in the history of Canada that the task of presenting an adequate conspectus of her past, within the narrow limits imposed, is far from being one easy of accomplishment. The most that can be done is to bring under review some of the leading incidents and personages, and to indicate, as far as possible, their influence in moulding her history and determining the course of events.

It has been well said that no part of England's world-wide colonial domain has passed through so many or such stormy stages of existence. Nowhere within the circuit of the Crown



territory have peace and war, union and disunion, loyalty and rebellion, followed each other in such quick succession. In none have the struggles between church and state, between party and party, been more bitter, or the great political changes which they have contributed to hasten been more sudden or more sweeping. Nowhere have the loyalty of the subject and the prestige of the nation been more sorely tried, and nowhere have they been more nobly vindicated, or more heroically sustained, than in Canada.

For the sake of greater clearness, it is best to divide the sketch of the history of Canada into periods; the first covering the discovery and exploration of the country, the second, its occupation and settlement by the French, and the third, its conquest and permanent possession, by the English.

1st Period. The Discovery and exploration of Canada.

There is an irreconcilable difference of opinion between the authorities as to the man who is rightfully entitled to claim the honour of first setting foot on Canadian soil. If the Norse Sagas can be accepted as reliable sources of history, one Leef Erikson,—who, in the year 1000, set forth on a daring quest southward, and after touching at "Hulluland" and "Markland" (by which it is asserted were meant Newfoundland and Nova Scotia) finally brought up at Vinland (Massachusetts)—was the first European to tread the American shore. But in spite of Professor Rafn and the old mill at Newport R I., the Norseman's title has been much discredited, and the honour his patriotic countrymen would confer upon him is by other investigators transferred to one among that brave band of Portuguese navigators whose fearless enterprise revealed not one, but two, New Worlds to the Old World of the fifteenth century. According to the authorities, while Diaz and Vasco di Gama were seeking a new route to India *via* the Cape of Good Hope, or rather the Cape of Storms as it was then called, John and Sebastian Cabot, father and son, a dauntless pair of sea-dogs, with a commission from Henry VII of England, were speeding across the unknown Atlantic, in full faith of finding a north-west passage, which would lead them by a directer route to the same golden goal, and it would seem as if the same year, 1497, beheld the discovery of England's present domain in South Africa and in North America.



The Cabots at that time ventured no farther than Newfoundland and Labrador, of which they took possession in the name of England, but the following year, Sebastian, the younger, having the same purpose in view, sailed as far north as Hudson's Straits; and then, being barred by icebergs, turned southward, and skirted the coast down to Chesapeake Bay, landing at several places, and partially exploring the fertile country he had thus discovered. It was upon these discoveries that Great Britain founded the claim, she afterwards so successfully asserted, to the greater part of North America.

In 1499 Jaspard Cortereal, a rival of Cabot, essayed to follow in his footsteps, and with two ships furnished him by the Portuguese government, reached the Labrador coast, and is generally credited with having given that region a title "Terra Laborador" (land which may be cultivated), that has been abbreviated into its present appellation. He also entered the gulf of St Lawrence, and explored it to same extent, but of the result of his investigations no record remains.

Two other explorers of this great gulf were Denys and Aubert, two French navigators, who made their way there in the year 1506 and 1508 respectively.

Meantime, the rich fisheries of the Newfoundland banks, whose treasures are practically inexhaustible, were being drawn upon for the first time by the hardy Breton, Basque and Norman fishermen, of whose visits the name Cape Breton, found upon the earliest maps, furnishes an interesting memorial.

None of the voyages thus taken, however, had any reference to the settlement of the country. It was reserved for France to make the first attempt in this direction, when, in the year 1518, the Baron de Lery fitted out an expedition with that end in view. Unfortunately the fates were not propitious to this venture, and beyond the landing of some horses on Sable Island, where they multiplied remarkably and exist in droves to the present day, nothing was accomplished.

France had as yet done little in exploring or occupying any portion of this boundless continent, whose wealth was filling the coffers of her rivals, and Francis I resolved to claim a share of the prize. "Shall the Kings of Spain and Portugal," he exclaimed, "divide an America between them? I would like to see the clause in Father Adam's will bequeathing that vast inherit-



ance to them. Under his direction, therefore, in 1524, Verrazzani, a Florentine, was sent forth. He ranged the coast from Florida to 50° north latitude and with superb assurance annexed on behalf of France the entire region previously explored by the Cabots, designating it "New France." The rival claims arising from these explorations were the chief grounds of the long and bloody conflict which later on was waged between Great Britain and France for the possession of this magnificent region beyond the seas, and the maritime supremacy that went with it.

Thus fitfully and feebly were the first attempts to found settlements on the North American coast carried on up to the close of the first quarter of the sixteenth century, and, as we have seen, without anything practical or permanent being achieved.

2ND PERIOD. OCCUPATION AND SETTLEMENT BY THE FRENCH.

In the year 1534 when France had somewhat rallied from the disaster inflicted upon her during recent wars, fresh enterprises were undertaken in the New World, and on the 20th April of that year the real discoverer of Canada proper, Jacques Cartier, a native of St Malo, was sent out with two small vessels of about 60 tons each. Sailing through the Straits of Belle Isle he scanned the barren coast of Labrador, and almost circumnavigated Newfoundland. Turning thence southwest-ward, he passed the Magdalen Islands, and on a glorious July day entered the large bay, for which the intense heat suggested the name of "des Chaleurs" it bears to this day. On the rocky headland of Gaspe he landed and, erecting a huge cross bearing the *fleur-de-lis* of France, took possession of the country in the name of his sovereign Francis I.

Learning from the natives of the existence of a great river leading so far up into the interior that "no man had ever traced it to its source," he sailed up the gulf of St Lawrence until he could see land on either side. But the season being well advanced, he deemed it prudent to go no farther until he should return next summer.

Delighted with the report his faithful Lieutenants brought back, the French king, in the following year, fitted Cartier out with three fine vessels, of which the largest was 120 tons burthen, and despatched him with the special blessing of the bishop of St. Malo and with a commission from himself to "form settlements

in the country and open traffic with the native tribes." The little squadron reached the mouth of the St Lawrence about the middle of July, and the 10th of August being the festival of Saint Lawrence, Cartier gave the name of that saint to the small bay in which he then was, since when it has been extended to cover the entire gulf and river.

Continuing up the noble stream, he came, on September 7th, to a fertile, vine-clad island, which he named the Isle of Bacchus. It is now the Island of Orleans. Here Donnacona, the king of the Algonquin nation, made him a state visit, accompanied by no less than five hundred followers in twelve huge canoes; and seven days later, having made up his mind to winter in the country, Cartier anchored his fleet at the mouth of the St Charles river, where stood the Indian town of Stadacona, beneath the high beetling promontory now crowned with the historic ramparts of Quebec.

Impatient to explore the river stretching out so grandly before him, Cartier advanced with fifty men in his smallest vessel. But the sand-bars of Lake St Peter compelled him to take to his boats. In these he pressed onward, until on October 2nd he reached the populous Indian town of Hochelaga, nestling beneath the wood-crested height which with characteristic loyalty he called " Mont Royal," since anglicized into Montreal. The friendly natives thronged the shore by hundreds, and received the pale-faced strangers with manifestations of the utmost delight, loading their boats with lavish presents of corn and fish. From his kindly hosts, Cartier learned of the existence, far to the west and south, of inland seas, broad lands and mighty rivers, then an almost unbroken solitude, now the home of a prosperous people.

After three days of pleasant intercourse, Cartier returned to Stadacona and wintered there, his little force suffering severely from insufficient food and inadequate clothing, being also plagued with scurvy of a malignant type, whose violence neither processions, vows nor litanies availed to stay. The following spring he returned to France, taking with him, much against their will, King Donnacona and nine of his chiefs as living trophies of his expedition.

Five years elapsed before Cartier returned to Canada, and this time he had with him the Sieur de Roberval whom the French Monarch had created Lieutenant-General and Viceroy of his newly

acquired possessions. The natives were at first friendly as before, but became hostile on learning that Donnacona and his companions had not returned; and Cartier's treachery began to recoil upon his own head. Another gloomy winter was spent, and again the would-be colonists went back home disheartened, although Roberval, who met them at Newfoundland, tried hard to retain them. Roberval continued on his course and wintered at Cape Rouge, whither, in 1543, Cartier was sent to carry the order for his recall, and the latter after enduring a third winter, left the country in the spring of 1544 never to return.

With the disastrous failure of all these early expeditions, the efforts of France to colonize Canada were suspended for a full half century, with the single exception of the Marquis de la Roche's quixotic attempt to settle Sable Island with a band of convicts selected from the Royal prisons—an attempt, it need hardly be said, that had no other result than to furnish historians with a highly romantic episode, and a spot on that "dark isle of mourning" with the name of the "French Gardens."

With the opening of the seventeenth century, there appears upon the scene one of the most remarkable of the many remarkable men who have taken an active part in moulding the destinies of Canada. This was Samuel de Champlain, whose high qualities both as sailor and soldier, marked him out as one peculiarly fitted for the task of opening up New France to civilization. Accordingly in 1603 he was commissioned, in conjunction with Pontgrave, for this arduous enterprise, and his first voyage, which produced nothing but a cargo of furs, was made in that year. Two years later, however, he returned in connection with a much larger expedition headed by the Sieur de Monts, who had obtained a patent of the vice-royalty of La Cadie or Acadie, now called Nova Scotia, and the first actual settlement by Europeans within the boundaries of the present Dominion of Canada was then (1605) made by de Monts at Port Royal (now Annapolis Royal) in Nova Scotia, and there the first field of wheat ever sown by the hand of white man in all Canada was sown—winter wheat it was, for Poutrincourt says "it grew under the snow." The little colony here established, after a fitful existence of several years, was finally destroyed by the English under Argall, the bitter strife between the French and English nations, which disturbed the continent for one

hundred and fifty years, there finding its beginning, and making, during its continuance, Port Royal famous as the most assaulted spot on this continent. It has been taken by force, five times by the English—by Argall in 1613, by Kirk in 1621, by Sedgwick in 1654, by Phipps in 1690 and by Nicholson in 1710. It was by them abandoned or restored to the French four times—by Argall in 1613, by treaty of St Germain in 1632, by treaty of Breda in 1667 and by treaty of Ryswick in 1697. It was unsuccessfully attacked by the English three times—by Church in 1694, by March in 1707, and by Wainwright also in 1707. It was unsuccessfully attacked by the French and Indians twice—in July 1744 by Abbe de Loutre, and in September 1744 by Duvivier. It was taken, sacked and abandoned twice, once by pirates in 1690 and once by United States, revolutionary forces in 1781.

Yet o'er this lovely spot, first chosen home
By either race beyond the Atlantic foam,
Have Gaul and Albion, for a century, warred
As pledge of Empire, victory's reward.
No other spot in all this western world
So oft hath seen the battle flag unfurled;
So often been the battering cannon's targe;
So oft the goal of headlong battle-charge;
So often heard the Indian war-whoop dread,
Or been by spoiler's ruthless hand bested;
So often borne in war's alternate chance
The flag of England and the flag of France.

Passing from Acadia to Canada proper, we find Champlain in 1608 once more ascending the broad St Lawrence, and on the 3rd of July, beneath the craggy heights of Quebec, laying the foundations of one of the most famous cities of the new world. The colonists soon were comfortably housed and the land cleared for tillage. Thenceforward, during many years, the history of Quebec was the history of Canada, and its annals contain little beyond the pathetic struggles of the colonists with the difficulties of their situation, and the dangers which constantly menaced them from their Indian foes. For the intense hostility of the Indians, the French were themselves wholly to blame. We have already seen with what ingratitude Cartier treated Donnacona, and now Champlain foolishly incurred the implacable hatred of the powerful Iroquois nation, by joining forces with the Algon-

quins in an attack upon one of their strongholds. The temporary advantage thereby gained was dearly paid for by a century and a half of rapine, plunder and namele s barbarities.

The Prince of Condé, Admiral Montmorency, and the Duke of Ventadour became successively viceroys of Canada, but the valour, fidelity and zeal of Champlain commanded the confidence of them all. Dauntless and tireless, he explored the St Lawrence and Ottawa Rivers, warred against the Indians, visited the mother country again and again in the interests of his beloved colony, strengthened the defences of Quebec; in fact was the heart and soul as well as the head of the entire enterprise. While he was Governor of Quebec, the little town was invested by Sir David Kirk, acting under instructions from the English court, and starved into an honourable surrender in the year 1629. But it turning out that peace had been concluded between the nations before the surrender, by the Treaty of St Germain signed in 1632, the whole of Canada, Cape Breton and Acadie was restored to the French. Three years later, Champlain's busy life drew to a close, and on Christmas day the noble soul whose character was more like that of knight-errant of mediæval romance than that of a practical soldier of the seventeenth century, passed peacefully away at the Castle of St Louis, which he himself had built upon the summit of the cliffs of Quebec.

Champlain had many successors in the arduous office of governor of New France, but none of like spirit, until Frontenac came in 1673, and the colony grew very slowly, scarce one hundred Europeans being added to it during the five years succeeding Champlain's death, while in 1662, when the charter of the Hundred Associates, a company which promised much and performed little, was annulled, the total foreign population did not exceed two thousand souls. The chief reason of this slow growth, as compared with the rapid advance made by the English colonies in Virginia and New England, was that, under Jesuit direction, far more interest was taken in the conversion of the savages than in the colonization of the country. From 1632 to 1682 priests of the Jesuit, Recollect and other orders, traversed the land, undaunted by trackless forests, terrible privations, merciless foes and appalling loneliness, pushing the work of the church wherever human beings were to be found and souls saved. The Jesuits were the pioneers of civilization in the far West. Their annual

reports, which have been collected and published by the Canadian Government in three large volumes entitled "Relations des Jesuits," constitute a perfect mine of priceless information on early Canadian history. Conspicuous among them were Pères Hennepin, Marquette, La Salle, Allouey, Dablon and Joliet, and many a priest heroically laid down his life rather than swerve aside, or turn back from the forward course he believed God had called him to pursue.

In the Spring of 1642 the foundations of Montreal, the future commercial metropolis of Canada, were laid by Montmagny with all the pious pomp and churchly ceremonial possible amidst such primitive surroundings, and thus onward into the heart of the country civilization slowly made its way, fighting with the relentless Indians for every foot of the passage.

In 1672 the Count de Frontenac was appointed governor and next to Champlain he is in every way the most conspicuous figure among the early holders of that office. The chief glory of his administration was the spirit of daring exploration and discovery by which it was characterized, the grandest achievement of all being the exploration of the Mississippi River and the Great West under Joliet, Marquette, La Salle and Hennepin. The sufferings of the colonies from the Indians, more especially the Iroquois, were terrible during this period, and at times it seemed as if they would really succeed in driving the detested "pale faces" from the country. Then in 1688 came the breaking out of war between France and England leading to hostilities between the French and New England colonies. These were carried on with varying success until the two nations came to terms again, and by the treaty of Ryswick (1697) restored to each other whatever conquests they had succeeded in making. The following year Frontenac died and was succeeded by De Callières.

After four years of peace, the war of the Spanish succession again involved England and France in bloody strife, which, of course, had to be shared by the colonies, and thenceforward until 1713 tragic scenes were enacted from the ocean-laved shores of Acadia to the pathless forests of the West, in which French, English and Indian warriors outvied one another in lust for blood.

By the Treaty of Utrecht (1713) the whole of Acadia, Newfoundland and Hudson's Bay were given to England, in whose possession they have ever since remained.

During the long period of peace that now ensued, the population of Canada, which by a census taken in 1721, was found to be only 25,600, slowly increased, and its internal development made considerable progress. The cultivation of the soil was, however, greatly neglected for the seductive fur trade, which possessed for the adventurous *voyageur* and *coureur de bois* a fascination that even its enormous profits did not wholly explain. Assuming the garb these often assumed the social habits of the red men, living in their wigwams, marrying their daughters, and rearing a dusky brood of children from whom have descended the Metis or Half-breeds which were last year brought into prominence through their rebellion in the North West.

In 1744, the war of the Austrian succession once more involved the colonies in a series of hostilities which were chiefly remarkable for the capture of the supposed impregnable fortress of Louisburg in Cape Breton by the English under Pepperell (1745), and the first appearance of George Washington, "the father of his country," who was then a valued officer in the army of the English colonies. The war terminated between the principals with the Treaty of Aix-la-Chappelle (1748), but this truce was regarded by both nations as only a breathing spell to prepare for the coming struggle that would decide the possession of the continent.

The year 1749 saw the foundation of Halifax, the capital of Nova Scotia, laid by Governor Cornwallis and the first muttering of the spirit of rebellion on the part of the Acadian colonists of the province that six years later rendered altogether unavoidable their complete expatriation—an event the true features of which, Longfellow has in his poem "Evangeline" obscured beneath a glamour of romance and pathos.

In 1754 the expected conflict opened with a brush between a small body of troops under Washington and a party of French soldiers under Jumonville at Fort de Quesne. Washington took the initiative, and, as Bancroft says, his command to 'fire' "kindled the world into a flame." It precipitated the tremendous struggle which, fought out to the bitter end on the plains of India, on the waters of the Mediterranean and the Spanish main, on the gold coast of Africa, on the ramparts of Louisburg, on the heights of Quebec and in the valley of the Ohio, resulted in the utter defeat of the French and the destruction of their sovereignty on

the American continent, and prepared the way for two important events; the independence of the United States, and the foundation of the unique Empire which, unlike Russia and the United States, "equally vast but not continuous, with the ocean flowing through it in every direction, lies, like a World-Venice, with the sea for streets,—Greater Britain."

The fluctuating fortunes of that fearful conflict, as the tide of war ebbed and flowed over the plains, down the rivers and through the forests of New France, New England, and the West and South, we cannot follow. It is known in history as the seven years' war, lasting as it did from 1755 to 1763 and being concluded by the Treaty of Paris in the latter year. During its continuance, many battles and sieges of great interest and importance took place, and many leaders won undying fame for themselves by their splendid achievements, but transcending all other events in magnitude and far-reaching consequence and towering high above all other men in the imperishable glory of their deeds, the siege of Quebec, and the rival commanders Wolfe and Montcalm, seem by their vastness to fill the whole picture as one looks back upon it from these present days. On the 13th September 1759, Wolfe won Quebec on the fields of Abraham and just one year later the capitulation of de Vaudreuil at Montreal before the combined armies of Amherst, Haviland and Murray completed the English conquest of Canada, and the entire continent, with the sole exception of the little rock-bound and fog-capped islands of St Pierre and Miquelon on the Newfoundland coast, passed forever out of of the possession of the French throne. This brings us to our third period, viz.—

3RD; CONQUEST AND PERMANENT POSSESSION BY THE ENGLISH.

Of the conquest we have already spoken at the close of the preceding period; it now remains to glance at the history of Canada since it has been a British possession. Dr Withrow, in his admirable History of Canada, thus eloquently summarizes the improvement wrought in Canada by its change of masters; "The conquest of Canada by the British was the most fortunate event in its history. It supplanted the institutions of the Middle Ages by those of modern civilization. It gave local self-government for abject submission to a foreign power and a corrupt court.

It gave the protection of the *Habeas Corpus* and trial by jury, instead of the oppressive tribunals of feudalism. For ignorance and repression, it gave cheap schools and a free press. It removed the arbitrary shackles from trade and abolished its unjust monopolies. It enfranchised the serfs of the soil and restricted the excessive power of the *seigneurs*. It gave an immeasurably ampler liberty to the people and a loftier impulse to progress than was before known. It banished the greedy cormorants who grew rich by the official plunder of the poor. The waste and ruin of a prolonged and cruel war were succeeded by the reign of peace and prosperity; and the pinchings of famine, by the rejoicings of abundance. The *habitans* could now cultivate their long-neglected acres free from the molestation of Indian massacres or the fear of British invasion. Even the conquered colonists themselves soon recognized their improved condition under their generous conquerors."

The printing press was introduced into Canada a year after the Treaty of Paris was signed, that is in 1764, and the first printed matter published in Canada was the prospectus of the Quebec *Gazette*, a newspaper which continued in existence till 10 years ago.

While there was, as a matter of course, a good deal of friction between "the new subjects," as the French were called, and the British settlers or "old subjects," under the temperate and judicious guidance of General Murray and Sir Guy Carleton matters proceeded hopefully and the country entered upon a career of prosperity, rapidly increasing in population and wealth.

In the year 1774, what was known as the Quebec Act was passed by the British Parliament. It extended the bounds of the Province from Labrador to the Mississippi, from the Ohio to the watershed of Hudson's Bay. It established the right of the French to the observance of the Roman Catholic religion without civil disability, and confirmed the tithes to the clergy, exempting, however, all Protestants from their payment. It restored the French civil code and established the English administration of law in criminal cases. Supreme authority was vested in the Governor and a Council of from 17 to 23 members, the latter being nominated by the Crown and consisting for the most part of persons of British birth.

This Act gave profound dissatisfaction, not only to the English-speaking minority in Canada, who considered that their rights

had been ruthlessly sacrificed, but also to the American colonists, who complained bitterly at the transfer to Canada of the country north and west of the Ohio river, for which they had so long and variously struggled. Despite all protests and appeals, the Act, which naturally gave great delight to the French population, continued to be the rule of government of the province for seventeen years.

The colonists were now called upon to pass through another war-period—bloody but brief—and this time with their own countrymen across the border. In the year following the passing of the Quebec Act, the long smouldering fires of secession in the American colonies burst into flame. On April 19th 1775 the "minute men" of Concord and Lexington 'fired the shot heard round the world,' and the War of Independence began, which ended in the loss to England of her "American" colonies. One of the first steps taken by the Secessionists was to capture Ticonderaga and Crown Point on Lake Champlain, and thus possess the gateway to Canada. Forts St John and Chambly soon followed and on the 12th November Montreal succumbed, but the tide turned, when, flushed with their first successes, the Americans essayed the capture of Quebec, two daring attempts resulting only in disastrous failure. On the 4th, July 1776, the "American" colonies declared their independence and the war closed on the 19th October, 1781, with the surrender of Lord Cornwallis at Yorktown, Virginia.

By the terms of the treaty of peace signed at Versailles September 3rd, 1783, Canada was despoiled of the magnificent region lying between the Mississippi and the Ohio, and was divided from the new nation designated "the United States of America" by the great lakes, the St Lawrence, the 49th parallel of N. latitude, and the highlands dividing the waters falling into the Atlantic from those emptying themselves into the St Lawrence and the St Croix Rivers.

Throughout all the secessionary movement, a considerable number of the American colonists had remained faithful to the Mother Country. At the close of the war it became painfully evident that there would be no peace for them within the boundaries of the United States. They found their property confiscated, their families ostracized, and even their lives menaced. In this emergency, the British Parliament came to their aid. A

sum exceeding three millions pounds sterling was voted for the assistance of these United Empire loyalists, as they were proud to call themselves; transport ships were provided for their conveyance to Canada and every possible arrangements made for their domiciliation in the sea-board provinces, and in what is now the province of Ontario. It is estimated that no less than 25,000 persons were thus induced to find refuge in the British colonies, where they proved of the utmost value in opening up and settling the country.

At that time (1784) the present province of Ontario was almost a wilderness. The entire European population is said to have been under 2,000, and these dwelt chiefly in the vicinity of the fortified posts on the St Lawrence, the Niagara and St. Clair rivers. On the other hand, the population of Lower Canada was about 120,000. In order therefore that the Western region might be developed, the Home Government offered generous grants of land to those who would settle there, besides assistance in the way of seed, stock and farming implements; under these inducements, the wilderness soon began to make way for smiling farms, thriving settlements and waving fields of grain.

In 1786, Lord Dorchester (of whom we have already heard as Sir Guy Carleton) became governor-general of British North America. The Canadian colonists now demanded the same constitutional privileges as were enjoyed in the maritime provinces, these latter having in 1784-85, been organized under special constitutional charters. The demand was met by the granting of the *Habeas Corpus* and of trial by jury in civil cases. But this did not content the Canadians, who asked also for an elective Legislative Assembly, and a larger measure of constitutional liberty. Accordingly in 1791 the Constitutional Bill was passed by the British government. It divided Canada into two provinces known as Upper and Lower Canada, or Canada West and Canada East. Each province received a separate Legislature, consisting of a Legislative Council, appointed by the Crown, a Legislative Assembly elected by the people, and a governor appointed by the Crown and responsible only to it The Assembly was elected for four years and in it was vested the power of raising a revenue for roads, bridges, schools and similar public services. A body which soon become obnoxious to the people was the Executive Council. It consisted of salaried officials

of the Crown and judges, who were the confidential advisers of the Governor, although not accountable for their acts either to him or to the Legislative Assembly. They generally held seats in the Legislative Council and virtually controlled the legislation by their predominant, yet irresponsible, influence.

The new constitution, as Fox had predicted, worked badly almost from the outset. The Legislative, and especially the Executive, Councils became objects of popular jealousy, and questions of both church and state soon began to divide the the people into parties and engender bitter political animosities.

The first Legislature of Lower Canada sat at Quebec in 1791, when that city contained about 7,000 inhabitants; and the first Legislature of Upper Canada, at Newark, the present town of Niagara, in 1792, where it continued to sit until 1797 when it removed to York (now Toronto) which city had been founded by governor Simcoe two years previously.

The progress of the country in trade and population, and the development of its resources were rapid. The tide of emigration steadily increased, the Irish troubles of '98, especially, leading many hardy settlers to seek new homes in the virgin wilds of Canada.

As the province increased in wealth and population the evils of a practically irresponsible government began to be felt. The Executive Council, composed of the governor and five of his nominees removable at his pleasure, gradually absorbed the whole administrative influence of the colony.

In the year 1812-14 the young auxiliary nation was called upon to undergo a severe ordeal through the United States declaring war against Great Britain, partly because of sympathy with France and partly through misunderstandings between the two governments. The United States naturally selected Canada as the first object of their attack. The position of the two countries was very unequal. Canada was totally unprepared for the conflict. She had less than 6,000 troops to defend 1500 miles of frontier. Her entire population was under 300,000, while that of the United States was eight millions. Despite this startling disparity, the Canadians, rallying as one man to the loyal support of their government, bore themselves so nobly throughout the two years' struggles which ensued, that when it ended the advantage lay clearly upon their side, and the victories of Queenston Heights and Chateauguay are to-day

pointed to with the same patriotic pride as the Englishman takes in Waterloo or the Frenchman in Austerlitz.

At the close of the war, the domestic dissensions, suspended while all attention was concentrated upon the defence of the country, broke out afresh. In both Upper and Lower Canada the people began to assert themselves against the rule of the Executive Councils, and the breach between the two branches of the Legislature grew wider every day. Conflicting claims as to revenue and other matters also sprang up between the two provinces, to obviate which their union was suggested so far back as 1822, but then withdrawn in consequence of the intense opposition manifested by the French population of Lower Canada. In Lower Canada, Louis J. Papineau, and in Upper Canada, William Lyon Mackenzie, came forward as the champions of popular rights and were after a time drawn into actual rebellion. The struggle for Responsible government, once entered upon, was never permitted to relax until at length, in 1840, acting upon the suggestions contained in the famous report of Lord Durham on the state of the Canadas, the Home Government determined upon the union of the two provinces and the acknowledgment in the new constitution of the principle of Responsible Government. Resolutions were passed by the Provincial Legislatures in favour of the scheme, and a bill based upon them passed the Imperial Parliament in 1840, and went into effect on the 6th Feby, 1841. On that day the provinces of Upper and Lower Canada were peacefully united under one administration, and responsible government was firmly established.

The Act of Union provided that there should be one Legislative Council and one Legislative Assembly in which each province should be equally represented. The Council was composed of twenty life members, appointed by the Crown; the Assembly, of eighty-four members elected by the people. The Executive Council or Cabinet comprised eight members and was responsible to the Legislature. It was presided over by the Governor-General who held his appointment from the Crown. The control of all public revenues was vested in the representatives of the people. In June 1841 the first united Parliament met at Kingston. Three years later the seat of government was changed to Montreal and on the destruction of the Parliament Buildings by

a mob in 1849 it went to Toronto. It was in the first session of the Legislature in Montreal that the present Premier, Sir John A. Macdonald, took his seat as a Legislator, and began that remarkable career which has associated his name with all the political and other developments Canada has experienced during more than forty years.

At that period, Upper and Lower Canada were on an equal footing as regards population, the lower province having 768,334, and the upper, 765,797. Nine years subsequently, after many experiments, all of which proved unsatisfactory, the burning question of the choice of a permanent capital was left to the Queen herself, and under her approval it was established at Ottawa, where it has since remained.

The history of Canada during the remaining years which preceded Confederation is altogether a history of political parties and may be passed over without going into details. Above all other questions of vital importance rose the question of Representation by Population. By the terms of the Act of Union each of the two provinces was allowed an equal number of Representetives in Parliament and so long as their population remained nearly equal, the arrangement worked satisfactorily enough. But of late years, Upper Canada had far outstripped her sister province in population and now naturally enough began to demand that the representation should be re-adjusted so as to bear a due proportion to the respective populations.

This demand the French province vigorously resisted and a crisis was precipitated which threatened the integrity of the union. No stable administration could be formed, and political affairs were at a dead lock. Happily, in this serious juncture, the scheme for a confederation of all the provinces in British North America presented itself as a solution of the existing difficulties.

During all the years since the Quebec Act of 1774 was passed, the French-speaking Canadians have displayed that loyalty to the British Crown which found its noblest illustration in the expression of Sir George Cartier that he was "an Englishman speaking the French language."

IV.

CONFEDERATION.

A short résumé of the march of this great measure towards its final consummation will not be without interest.

In 1808 Richard J. Uniacke introduced the question of Union of the British provinces in North America, before the Legislature of Nova Scotia.

In 1814, Chief Justice Sewell of Quebec proposed the union of the British North American colonies to Lord Bathurst as a plan for solving governmental difficulties then existing.

In 1822, John Beverley Robinson, Attorney-General for Upper Canada, drew up a plan for the confederation of British North America. In 1825, Mr. McCollogh, then publishing the *Montreal Free Press*, wrote strongly and often in favour of Federal Union, and in December, 1835, Robert Gourlay, writing in London, submitted a scheme of the same nature. In 1839, Lord Durham recommended a Confederation of the Provinces in a report to the British Government. In 1854, Hon. J. W. Johnston introduced a resolution in favour of union of the Provinces in the Nova Scotian Legislature. In 1857, Hon. J. W. Johnston and Hon. A. G. Archibald went to England as delegates from the Nova Scotia Legislature on the question. In 1857, Hon. A. T. Galt spoke in favour of Confederation in the Canadian Legislature. In the same year, when Hon. G. E. Cartier, Hon. John Rose and Hon. A. T. Galt were in England on Intercolonial matters, they talked over Confederation with the Colonial Secretary, Sir Bulwer Lytton, who asked for a public expression of opinion from the Canadians.

The first Legislative step towards a Federal Union was made by the Parliament of Nova Scotia in 1861 by the unanimous vote of the Legislative Assembly, which was favourably received by the Secretary of State for the Colonies in a despatch of the 6th of July, 1862.

On the 14th of June, 1864, Hon. George Brown, as chairman

of a select committee of the Canadian Legislature, reported in favour of a federative system applied either to Canada alone or to the whole of the British North American provinces.

On Sept. 1st, delegates from the governments of Nova Scotia, New Brunswick and Prince Edward Island met at Charlottetown to discuss Maritime Union. While discussion was going on, delegates from the Province of Canada asked permission to attend, which was granted, and the larger union was proposed on the 12th of September.

On the 10th of Oct., 1864, delegates from the Provinces of Canada, Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland met at Quebec, and, during seventeen days' session, framed the basis of Confederation in a series of resolutions.

On the 3rd of February, 1865, the Canadian Parliament met at Quebec and the resolutions of the Quebec Conference were submitted by Hon. E. P. Taché in Legislative Council, and by Hon. John A. Macdonald in the House of Assembly. The motion of approval was carried by ninety-one to thirty three.

On the 24th of April, 1865, New Brunswick having returned a Legislative Assembly opposed to Confederation, Hon. Charles Tupper in the Nova Scotian Assembly moved that negotiations for the Union of Nova Scotia, New Brunswick and Prince Edward Island should be renewed. The Motion carried.

On the 17th of April, 1866, Hon. Charles Tupper moved in the Assembly of Nova Scotia that the Lieut.-Governor be authorised to appoint delegates to arrange with the Imperial Government a scheme of Union effectively ensuring just provision for the rights and interests of Nova Scotia. This was carried by thirty-one to nineteen. On the 30th of June, 1866, a similar resolution was moved in the New Brunswick Legislature and carried by thirty-one to eight.

On the 4th of December, 1866, the deputations from the Provinces of Canada, New Brunswick and Nova Scotia duly organized in London, the Hon. John A. Macdonald in the chair, and subsequently held interviews with Her Majesty's legal officers, beginning on the 24th of January, 1867.

On 29th of March, 1867, the Union Act was finally enacted by the Imperial Parliament.

On the 22nd of May a Royal Proclamation issued at Windsor Castle.

On the 1st of July, 1867, the Union was proclaimed throughout the four provinces, which became the Dominion of Canada.

On the 23rd of June, 1870, Rupert's Land and the North-western Territory were added to the Dominion by Imperial order-in-council, passed upon an address from the Canadian Houses of Parliament; the money payment to the Hudson Bay Company for their interest being fixed at £300,000.

On the 15th of July, 1870, Manitoba was created a province of the Dominion.

On the 20th of July, 1871, British Columbia was admitted into the Union.

On the 1st July, 1872, Prince Edward Island was admitted a province of the Dominion of Canada.

V.

THE CONSTITUTION OF CANADA.

The constitution of Canada is set forth in the British North America Act, 1867, 30 Vic. Cap. 3.

The executive government and authority is vested in the Queen of Great Britain and Ireland, who governs through the person of a Governor General, appointed by her, but paid by Canada.

By the adoption of this plan, the Canadian Constitution has become the very image and reflection of parliamentary government in England. The Governor, like the Sovereign whom he represents, holds himself aloof from and superior to parties, and governs through constitutional advisers, who have acquired ascendancy in the Commons.

A council, known as the Queen's Privy Council for Canada, taken only from members of the Dominion Parliament, forms a ministry which must possess the confidence of the majority in the House of Commons. The power of dismissing the ministry lies with the Governor-General.

The command of the Canadian military, both active and reserve, is vested in the Queen, who appoints an officer of the British army of not less rank than a Major-General, who is paid by Canada. The seat of Government is at Ottawa.

There is one parliament for Canada, consisting of the Queen, an Upper House styled the Senate, and a Lower House styled the House of Commons.

The Senate consists of seventy-eight members, appointed for life by the Governor in Council; twenty-four from Ontario, twenty-four from Quebec, ten from Nova Scotia, ten from New Brunswick, three from British Columbia, four from Prince Edward Island, and three from Manitoba. Each senator must be not less than thirty years of age, a born or naturalized subject, and possessed of property in his own province, real or personal, of the value of $4,000. He must continue to be resident within the province for which he is appointed.

The House of Commons consists of 211 members, elected for five years, (unless the House is sooner dissolved) on the basis of representation by population for the older provinces, the arrangement being that the Province of Quebec shall always have sixty-five members, and the other provinces proportionately to population according to the census, which is taken every ten years, the last being taken in 1881.

By provinces, under the latest rearrangement the representation in the Commons is as follows:—

92—Ontario, 65—Quebec, 21—Nova Scotia, 19—New Brunswick,	Original provinces of the confederation.
6—Prince Edward Island, 5—Manitoba, 6—British Columbia,	By terms of Statutes admitting them.

Bills for appropriating any part of the public revenue or imposing any tax or impost must originate in the House of Commons, but no such bill can be introduced unless recommended by message from the Governor General.

The privileges and immunities of the Senate and the House of Commons are defined by the Parliament of Canada, but must not exceed those enjoyed by the Imperial House of Commons in 1867. The sittings are annual, but may be often

The naturalization laws are as follow:—

1. Alien women married to British subjects become, *ipso facto*, naturalized British subjects.

2. Aliens, after three years' residence, bringing certificates of good character, on taking the oath of residence and allegiance before a judge, commissioner, or magistrate, and causing the same to be registered in a court of record, can have a certificate of naturalization given them, and enjoy all privileges of British subjects.

Voting in elections for representatives sitting in the Commons is by ballot.

The qualifications of voters for the Dominion House of Commons are as follows: "Person," under the Franchise Act, means a male person, including an Indian, and excluding a person of Mongolian or Chinese race. Every person of the full age of twenty-one years, a British subject by birth or naturalization, is entitled to vote on being registered, provided he is the owner of real property, within a city, of the actual value of $300, or, within a town, of the actual value of $200; or is the tenant of real property within cities or towns, under lease at a monthly rental of at least two dollars, or quarterly rental of twelve dollars, or annual rental of twenty dollars, having been in possession for at least one year; or has been the *bona fide* occupant, for at least a year, of real property, within a city, of the actual value of $300, or, within a town, of the value of $200; or is a resident, within a city or town, deriving an income from earnings, or investments, in Canada, of not less than $300 a year; or is the son of any owner of real property, which property is of sufficient value to qualify both father and son; or, in the event of the father's death, has been resident upon such property, continuously, for a year with his mother.

In counties every person is entitled to vote, on being registered, who is of the age of twenty-one years, a British subject, and the owner of real property, within the electoral district, of the value of $150, or is tenant under the same conditions, as to rent, as in cities and towns; or is a *bona fide* occupant of real property of the value of $150; or is a resident, with income from earnings, or investments, of $300; or is the son of a farmer living with his father on a farm of sufficient value to give both father and son votes; or is the son of farmer, living with widowed mother; or is the son of any other owner of real property in the electoral district, under the same conditions as the father living or dead;

or is a fisherman and is owner of real property and boats, nets, fishing gear and tackle of the value of $150.

Persons disqualified for voting by the Act are—1st, the judges of the various courts; 2nd, revising and returning officers and election clerks; 3rd, counsel, agents, attornies, and clerks employed by the candidate either before or during the election, and who have received, or expect to receive, any sum of money, fee, office, place, or employment from any candidate; 4th, Indians outside of the four original provinces of the Confederation.

The revising officers who prepare the electoral lists are appointed by the governor-in-council and hold office during good behaviour. They must be either senior or junior county court judges, barristers or notaries of at least five years' standing.

By the Act of Union the Dominion Government has, speaking without technical accuracy, control of all matters which by that Act are not specially delegated to the provinces. It has power to make laws for the peace and good government of the whole Dominion, as also to regulate:

1. Public debt and property.
2. Trade and commerce.
3. Indirect taxation.
4. Borrowing on the public credit.
5. The postal service.
6. The census and statistics.
7. Militia and defence.
8. Lighthouse and coast service.
9. Navigation and shipping.
10. Quarantine.
11. Fisheries.
12. Currency and banking.
13. Weights and measures.
14. Bankruptcy and insolvency.
15. Naturalization
16. Marriage and divorce.
17. Penitentiaries.
18. Criminal law, including procedure in criminal cases.

PROVINCIAL CONSTITUTIONS.

The Government of Canada appoints the Lieut.-Governors, of whom there is one for each province, whose salary is paid by the Dominion Parliament.

Each province has its own elective assembly and administration with full power to regulate its own local affairs as set forth in the Confederation Act; to dispose of its revenues and enact such laws as it may deem best for its own internal welfare, provided only that such laws do not interfere with, and are not adverse to, the legislation of the Federal Parliament.

The Dominion Government assumed the debts existing at the time of the Union, agreeing at the same time to pay the provinces an annual subsidy, which is a grant equal to eighty cents a head of the population of the four provinces originally forming the Dominion, as ascertained by the census of 1861, except in in the case of New Brunswick and Nova Scotia, where it was arranged that the subsidy should increase each decennial census till the population in each case reached 400,000.

Besides this subsidy there is given to each province an annual allowance for government, and also an annual allowance of interest on the amount of debt allowed, where the province has not reached the limit of the authorized debt.

The provinces retained possession of the lands belonging to them before Confederation. Manitoba, having no public lands at the time of its creation into a province, has since received from the Dominion Government a gift of swamp lands.

The provinces appoint all the officers required for the administration of justice, with the single exception of the judges.

They regulate:—1st, Education; 2nd, Asylums, hospitals, charities and eleemosynary institutions;. 3rd, Common gaols, prisons and reformatories; 4th, Municipal institutions; 5th, Shop tavern and other licenses; 6th, Local works; 7th, Solemnization of Marriage; 8th, Property and civil rights; 9th, Administration of justice, so far as the constitution, maintenance and organization of provincial courts of both civil and criminal jurisdiction and the

appointment of magistrates or jnstices of the peace, are concerned.

Emigration and immigration are subjects of both federal and provincial legislation, but provincial laws on the subject must not conflict with federal enactments.

The general principles of the Canadian constitution are; representative governments by ministers responsible to the people; a Federal government having charge of the general public good; and Provincial governments attending to local and provincial interests.

The Provinces have not any power to organize and maintain a provincial military force, being in this respect unlike the States in the Union to the south; nor have they final legislation, the Dominion Government possessing, under the constitution, the power of veto.

The North-West territories are provided, for purposes of local government, with a local board called the North-West Council composed of the stipendiary magistrates (appointees of the Federal Government) and others elected by the people. A legislative assembly may be formed in place of the North-West Council as soon as the elected members of any Council amount in all to 21 persons. Measures will be taken during the present session of Parliament to provide for the representation of the territories in the Federal Parliament.

Excepting in Prince Edward Island, Municipal institutions have been adopted in all the Provinces of the Dominion, the germ of which is in the municipality. Several of these form a township, and these in turn are subdivisions of the county. The council of each county, township, city, town and incorporated village has power to pass by-laws for obtaining such real and personal property as may be required for the use of the corporation; for appointing and paying pound-keepers, fence-viewers, overseers of highways, road-surveyors, road-commissioners, valuators; for granting money in aid of agricultural societies, mechanics' institutes, manufacturing establishments or road companies; for regulating driving on roads and bridges; egress from buildings, and making drains; for inflicting certain fines; for planting ornamental trees and prohibiting the sale of intoxicating liquor under Temperance Acts passed by the Legislature.

Each village of 750 or more inhabitants, each town of 2,000 and upwards, and each township has its council elected annually by the rate payers. The whole have, by their reeves and deputy reeves, a representation in the county council which meets periodically. A vast amount of business, that needs special Acts of Parliament in Great Britain, is successfully carried on by these municipal bodies under the provisions of the general law. Taken in the large, it may be said that Canada is pre-eminently the land of self-government. The people have been trained for years in municipal government, and, by it, keep control of expenditure for township purposes, as through the Provincial Legislatures and the Federal Parliament they keep control of expenditures for provincial and federal purposes.

ADMINISTRATION OF GOVERNMENT.

The business of the country is transacted by the members of the Cabinet, each of whom, as a rule, presides over a department.

These departments are as follows.—

1st; The Governor General's office.

2nd; The Privy Council office, with charge of state papers and records of council.

3rd; The Department of the Minister of Justice and Attorney-General, including the management of penitentiaries.

4th; The Department of Railways and Canals.

5th; The Department of the Minister of Public Works, having control of all public works, other than railways and canals.

6th; The Department of the Minister of the Interior, including: *a*, Dominion Lands; *b*, Geological Survey.

7th; The Department of the Secretary of State, including: *a*, official correspondence with the Governor-General's office and with the Lieutenant-Governors of the Provinces; *b*, The printing and publishing of the Official Gazette; *c*, The registration of all public legal documents; *d*, The Government stationery and Queen's Printer's office.

8th; The Department of the Minister of Marine and Fisheries, including: construction and maintenance of lighthouses; river police; revenue coast-guard; quarantine; protection of fisheries and fish culture.

9. The Department of the Minister of Militia and Defence, including: militia, fortifications and military schools.

10. The Department of the Minister of Finance, including: Treasury board, government savings' banks, and audit.

11. The Department of the Minister of Customs.

12. The Department of the Minister of Inland Revenue, including: collection of the excise; canal and timber slide tolls; ferry dues and the carrying out of the Acts relating to the inspection of food, gas, weights and measures.

13. The Department of the Postmaster-General, including Post-office savings' banks.

14. The Department of Agriculture, including: the Patent office; census and statistical office; and immigration.

In addition to these there are the Department of Mounted Police, and the Department of Indian affairs, administered by the President of the Privy Council.

VI.

THE POPULATION OF CANADA.

The people to whom it has fallen to conquer this vast region from its primeval solitude, and to make it contribute to the world's wealth and wants, have had a hard task, from a variety of causes.

Population, as we have seen, was first attracted to the continent of North America from Europe, and scattered settlements were formed from the Gulf of St. Lawrence to the Gulf of Mexico. These immigrants peopled the regions contiguous to the coast, and population slowly pushed its way into the back country in an ever-widening circumference. While this movement was progressing along the Atlantic Coast, the descendants of the few hardy Norman emigrants who had secured a foothold at the entrance of the St. Lawrence River pushed vigorously forward, exploring and settling the St. Lawrence and its tributary rivers and streams.

Two centres of population were thus formed on this continent. Sometimes an advantage secured by one centre attracted wanderers from the other centre. Thus, the withdrawal of the United

States—the second great country in area on this continent—from the British Empire, caused an extensive movement of population from the Atlantic sea-board between the St. Croix and the Delaware Rivers, to British territory, thousands going from New York and other ports to Nova Scotia and New Brunswick by water, and tens of thousands painfully forcing their way through forests to the then unoccupied regions north of lakes Erie and Ontario.

The cession of Acadia to England, by the French, rendered it necessary, as a precautionary measure, that numbers of the French Acadians should be deported from Nova Scotia and scattered in little communities from Maine to Louisiana. These, in after years, attracted the French population of what is now Quebec Province to the Eastern or New England States, where by the slow accretion of years there is at present a considerable body, chiefly employed in factories.

It is difficult to tell which of these two centres, in the course of the years has the better succeeded in winning population from each other and from European countries. Up to 1840 the Canadian centre had obtained an absolutely larger number of European immigrants. Then came, practically, the opening up of the Western States, a region which first began to attract attention in 1830. This fact, taken in connection with the movement of population from Ireland owing to famine, gave a greater impetus to the United States centre, and it rapidly passed the Canadian in the race for population. The attractions of new lands of reputed fertility were great, and many thousands of Canadians passed over to the newly opened regions, the movement continuing for years. Canada's North-West Territory, the counterpart, and in many respects the superior, of the Western States, was locked up and was destined to remain locked up for 30 years, the Hudson Bay Company holding the key.

The territorial claims of this trading company were purchased by the Canadian Government in 1869, and Canada, to recover her lost headway, began at once to develop the new region, prosecuting the survey of lands with such energy that there are now over 70,000,000 acres completely surveyed.

In the meantime, for a whole generation, population had spread throughout the Western States towards the boundary line. When the restraints to settlement were removed by the purchase of the

territory, there began a movement of population from the United States to the Canadian North-West, which has equalled in volume any of the many streams that in the past, now moving in one direction and now in another, have helped to mix up the peoples on the border land of the two countries to the great advantage of both.

The statistics of population and immigration in Canada in view of the general continental movements are interesting.

In 1806 the population, of what is now known as Canada, was 455,899. It had increased to 4,324,810 in 1881, when the latest census was taken.

Table showing the increase of population in the Dominion of Canada :

YEAR.	POPULATION.	YEAR.	POPULATION.
1806	455,899	1861	3,323,292
1834	1,302,961	1871	3,602,596
1844	1,802,889	1881	4,324,810
1851	2,547,158		

Table showing additions to population by Immigration:

YEAR.	IMMIGRANT SETTLERS.	YEAR.	IMMIGRANT SETTLERS.
1868	12,765	1877	27,082
1869	18,630	1878	29,807
1870	24,706	1879	40,492
1871	27,773	1880	38,505
1872	36,578	1881	47,991
1873	50,050	1882	112,458
1874	39,373	1883	133,624
1875	27,382	1884	103,824
1876	25,633	1885	79,169

At the port of Quebec a registry is kept of the nationalities of arriving immigrants from which the following facts are taken.

The nationalities of the immigrants of 1885, compared with those of 1884, were as follow—

	1884.	1885.
English	18,638	10,511
Irish	4,473	2,107
Scotch	3,040	2,099
Germans	1,237	510
Scandinavians	3,451	1,489
French and Belgians	150	104
Italians	35	...
Russians	322	50
Austrians	95	18
Icelanders	38	93
Roumanians	50	..
Bosnians	..	49
	31,529	17,030

The number of single men arrived was, 5,977.
The number of single women arrived was, 2,154.

The trades and callings of the male steerage passengers, as per passenger lists, were as follows :—

Farmers	1,071
Farm labourers and labourers	4,449
Mechanics	886
Clerks	26
	7,422

The following table shows the number of immigrants, chiefly children, brought during recent years to Canada under the auspices of charitable societies and individuals:—

—	1881.	1882.	1883.	1884.	1885.
Earl of Shaftesbury	.....	.....	35	.....	33
Miss Bilborough	97	70	189	.....	.....
Miss Macpherson	98	204	197	172	187
Mr. Middlemore	61	74	125	148	20
Miss Rye	117	121	159	169	128
East London Family Emigration Fund of Hon Mrs. Hobart	39	.....	.....	226	53
Children's Home, London	.....	39	.....	.....	.....
Rev. M. Nugent, Liverpool	35	44	.....	.....	.....
South Dublin Union	77	82	.....	.....	.....
Rev. Mr. Stevenson	44	.....	42	77	.....
Catholic Protective Society, Liverpool	.....	30	100	192	178
Kingswood Reformatory, Bristol	.....	.....	.....	.....	.....
Mrs. Birt	70	120	108	220	83
Mr. Quarrier, Glasgow	.....	.....	.....	263	385
Rev. Mr. Stephenson, Childern's Home, Hamilton	.....	41	.....	.....	82
Cardinal Manning, Dublin	88	72	62	.....	.....
Miss Kennedy, Dublin	.....	.....	.....	.....	.....
Carrick Shannon Union	8	.....	.....	.....	.....
Boys' Agricultural School	6	.....	.....	.....	.....
Friends' Mission, Dublin	6	.....	.....	.....	.....
Mr. Meredith, London	12	.....	.....	.....	.....
Boys' Farm School, Birmingham	.....	2	.....	.....	.....
Rev. Mr. Wood, London	.....	13	.....	.....	.....
Mrs. Cadie, of Kent	.....	18	.....	.....	.....
Lord A Douglas	.....	40	.....	35	15
Tralee Convent	.....	13	.....	.....	.....
Dr. Barnardo, London	.....	56	173	266	400
Mohill Union, Leitrim	.....	10	.....	.....	.....
Prescott Board Guardians, Liverpool	.....	.....	23	45	.....
Boys' Refuge, London	.....	.....	.....	40	.....
Boys' Home, Southwark, London	.....	.....	.....	52	96
Cardinal Manning	.....	.....	.....	56	48
Colonization Fund, Mr J. F. Boyd, London	.....	.....	.....	50	.....
Red Hill Reformatory	.....	.....	.....	.....	7
Feltham Reformatory	.....	.....	.....	.....	25
Mr. Whitewill, Bristol	.....	.....	.....	.....	14
Waifs and Strays Association, London	.....	.....	.....	.....	7
Dr. Shea, Berkdale	.....	.....	.....	.....	9
Total	727	1,048	1,218	2,011	1,746

The following table will show the value of cash and effects reported at the agencies and through the customs, as brought into Canada by the settlers, and also the actual cost to the Government of immigration and gain to Canada through the expenditure:—

Years.	Value of effects.	Cost to Canada.	Gain to Canada.
	$	$	$
1875	1,344,573	302,771	1,041,802
1876	686,205	328,178	385,035
1877	632,269	229,652	402,617
1878	1,202,569	150,351	1,052,218
1879	1,152,612	212,224	940,388
1880	1,295,565	161,213	1,134,352
1881	4,188,925	214,251	3,974,674
1882	3,171,505	215,339	2,956,166
1883	2,784,881	373,452	2,410,924
1884	4,814,872	511,208	4,303,664
1885	4,143,866	423,651	3,720,215

The population, thus gathered together and seeking to accomplish the task of developing the vast country entrusted to them, and of supplying it with all the paraphernalia of modern civilization, were at the last census found to be divided along lines, now to be mentioned.

The population at the last census, which was taken on the 4th of April, 1881, was 4,324,810. Between that period and the 4th of April, 1886, the inhabitants are estimated to have increased to 4,776,000. The proportion of the sexes calculated from the returns of the census of 1881, is 101.2 males to 98.8 females.

According to the census of 1881, 84.90 per cent. of the inhabitants of Canada are native born and 96.96 per cent. British born. The natives of Ireland numbered 185,526; of England, 169,504, and of Scotland, 115,062. Those of the United States numbered 77,753, and of Germany 25,327.

The religions of the people as given in the census of 1881 were: Protestants, 2,436,554; Roman Catholic, 1,791,982; Jews, 2,393; Pagans, 4,478; without creed and creed not given, 89,403.

The larger Protestant denominations were as follows: Methodists, 742,981; Presbyterians, 676,165; Church of England, 574,818; Baptists, 296,525.

Classifying the population according to *ages* and denominating the classes as follows: "Infants," persons under one year old; "children," from one to five years of age; "boys and girls, from

five to fifteen; "youths and maidens," from fifteen to twenty; "young men and women," from 20 to 30; "middle-aged men and women," from 30 to 50; and "old men and women," 50 years and upwards, the following results are obtained:—

	MALES.	FEMALES.
Infants	61,704	59,473
Children	238,318	220,956
Boys and girls	540,376	521,174
Youths and maidens	237,317	239,281
Young men and women	376,973	384,007
Middle-aged do	430,674	421,954
Old men and women	274,505	250,337
Not given	29,921	29,848

Of the aged, 27,052 were 80 years old and upwards, and of these 2,999 were 90 years old and upwards. These latter were: males, 1,416; females, 1,583. A special investigation into the claim of persons to be centenarians was made after the census of 1871. It showed that there were in Canada nine persons from 100 to 113 years old.

In 1881, according to the census returns, 36 per cent. of the males and 37 per cent. of the females of 15 years of age and upwards, were living in the married state; about 4 per cent. of the males and nearly 6 per cent. of the females, at the same period of life, were living in a state of widowhood; 60 per cent. of the males and 57 per cent. of the females had never been married.

The *occupations* as returned by the census-taking are arranged under a great number of heads. For the purpose of a general view it may be said that the agricultural class includes 662,630 persons; the commercial class, 107,649; the domestic class, 74,830; the industrial, 287,295; the professional, 52,974, and not classified, 205,228. To be somewhat more specific, the division may be as follows: Ministering to government, 9,334; to religion, 11,468; to health, 5,087; to law, 4,749; to education, 19,723; to art, science and literature, 8,816; to entertainment or clothing, 29,917; traders, 34,035; domestic servants, 63,431; contractors, artisans and mechanics, 149,930; manufacturers, 25,572; engaged in mining, 6,541; engaged in pastoral pursuits and agriculture, 662,630; engaged in land carriage, 8,220; in sea navigation, 18,426; dealing in food, 43,280; labourers, 165,707; following other pursuits, 66,364; not classified, 205,228.

The occupied habitations of all kinds according to the census of 1881 numbered 753,017, which was 180,304 more than the returned in the census of 1871.

Aborigines.

The aboriginal people of the North American continent are divided into two groups, the one Malay-Polynesian, and the other Turanian in origin. These groups are both represented in Canada; the Algonquins belonging to the former, the Iroquois, Tinnehs, and Esquimaux to the latter. Through the Algonquins, Canada's aborigines are connected with the peoples inhabiting the vast area from Malacca to New Zealand, and from Madagascar to the Sandwich and Easter Islands. Through the Iroquois, they are connected with the Finnic, Turkic, and Mongolic classes of Asian and European peoples. The two are distinct. The Algonquin languages differ radically from those of the Iroquois both in grammatical and in verbal forms. The flatter face, inferior stature, and more delicately formed extremities of the Algonquins are in marked contrast with the prominent features, the larger proportions and muscular development of the Iroquois. The Iroquois is pre-eminently a landsman, a warrior, and a lover of manly sports, while the Algonquin loves the water, is unaggressive, and spends his spare time in idleness. Taciturnity, with all that it implies, such as the absence of humor, is characteristic of the Algonquin, but not of the Iroquois. The Iroquois was originally a sun-worshipper, but such the Algonquin never was. In fact, these two families have nothing in common beyond the mere accidents of condition and certain minor features of life, resulting from mutual intercourse. "The Algonquin and the Iroquois, who have jointly contributed to the portraiture of the ideal red man, are the representatives of two families as distinct as any that can be found outside the Aryan and Semitic areas of the old world."

The Indians of Canada, springing from two distinct ancestries, may be divided into four families: The Esquimaux or Innuits, the Tinnehs, the Algonquins, and the Huron-Iroquois.

The Innuits inhabit the littoral of the North Sea from Labrador to Alaska, and the northern shores and islands of Hudson's Bay. The Tinnehs, or Dénè Dindjiés, inhabit the val-

ley of the Athabasca, the region east and north of the Great Slave Lake, the Peace River district, the regions north of Great Bear Lake bordering on the Esquimaux, the mountains of the Mackenzie River, the slopes of the Rocky Mountains, and almost the whole of the region west of the Rockies including Vancouver and Queen Charlotte's Islands, from which latter places they have poured in adventurous bands through the passes of the mountains and taken possession of the country south of the Esquimaux territory.

The Algonquins are found in the interior of Labrador and throughout the region between the Atlantic sea-coast and Lake Superior. They have also found their way west to the southern regions of the Canadian North-West, where the Saulteaux, Prairie Crees, Wood Crees, Blackfeet, Bloods, and Piegans numbering about 32,000 have taken root, occupying territory to the south of that taken by the Pacific Coast Indians.

Besides these races, there are scattered bands of the Huron-Iroquois, as the Hurons of Lorette near Quebec city, those of Caughnawaga, Lake of Two Mountains, St. Regis and the Iroquois found in several places on the peninsula between Lakes Erie and St. Clair. These are east of Lake Superior. West are to be found the Assiniboines and the Sioux, belonging to the Dakotas, and thus allied to the Iroquois as sprung from a common Turanian or northern Asiatic origin. The Indians of this origin number about 10,000, the Innuits about 4,000, and the Algonquins about 117,000; making in all, according to the latest returns, a total aboriginal population of 131,957. Of these 85,329 are reported to the Indian Department as resident on their allotted reserves; the rest are nomadic.

The Indians of Canada are in various stages of development. Some are polygamous, while some have adopted the civilization of the white population to such an extent as scarcely to be distinguished from them. Some would not know what a vote for a Member of Parliament means. Others possess the electoral franchise and prize it highly. Some are increasing in numbers

and others are decreasing. The returns as to Indians resident on reserves show the following condition of things:—

YEAR.	1884.	1885.
Numbers on reserves	88,897	85,329
Quantity of land cultivated.....acres	80,725	85,911
New land made each year.....acres	3,861	3,242
Dwellings	10,712	11,509
Barns or stables	3,563	3,992
Threshing machines	47	64
Fanning mills	386	401
Ploughs, harrows, and waggons	5,749	6,307
Other implements	19,888	17,529
Horses	7,332	19,623
Cows	4,717	5,682
Sheep	1,833	1,984
Pigs	7,289	8,504
Oxen	1,993	1,447
Young stock	5,287	7,033
Hay crop for year.....tons	18,550	18,613
Grain.....bushels.	211,630	319,631
Potato.....bushels.	240,205	280,230
Fish caught.....value	$994,378	$701,417
Furs	$332,435	$711,393
Other industries	$131,246	$181,848

The Indians west of the Ottawa River, to Lake Superior, along the great Lakes, are the most advanced. Of the tribe called the Six Nation Indians, the Superintendent-General of Indian affairs (Sir John A. Macdonald) writes in his annual report for 1884: "Many of their farms are well cultivated, and the products of the soil and dairy exhibited at their annual agricultural exhibitions commanded the admiration of all persons who attend them. Their exhibition of this year was remarkably successful, and they combined with it the centennial celebration of the grant, made to them by the Crown, of the tract of land of which their reserve forms a part, in recognition of their loyalty and valor, as practically proved on numerous occasions on the field of battle in defence of the British flag."

Upon the departure of His Excellency the Marquis of Lorne and Her Royal Highness the Princess Louise, the Six Nations Council sent a farewell address; and upon the arrival of his Excellency the Marquis of Lansdowne a decorated address of welcome was forwarded by them. Upon learning the death of His Royal Highness the Duke of Albany, the chiefs again

evinced their sympathy and loyalty by a message of condolence to the Queen.

The Government of Canada has taken charge of the Indians. Like an army, they have been, and are still, in large numbers, fed and clothed by the Government. With their consent their lands have in many instances been sold until an Indian fund has accumulated amounting now to over $3,000,000. Schools have been established for them, and about 140 teachers, many of whom are Indians, are engaged in teaching. In these schools are over 4,000 pupils, and the annual inspection shows good results. Many of these Indians have aided by their labour in constructing the Canadian Pacific Railway. In some instances they have become contractors and employers of labour. In one or two instances the tribes have shown themselves so well able to manage their own affairs that the Government has released them from their position as wards of the country and has given into their own keeping the moneys obtained from the sale of their lands. Under an Act of Parliament, passed in 1884, privileges have been conferred on the more advanced bands with a view of training them for the exercise of municipal powers. Under an Act passed in 1885, Indians, whether on Indian reserves or mingling with the general community, have conferred on them the right to vote for members of Parliament on the same conditions as other inhabitants of Canada. These Indians, thus placed on a perfect equality with the Whites, demonstrate the success which has attended the efforts of Canada to raise them from their state of savagery to a civilized condition.

The same effort, possibly (especially in the North-West), with less promise of ultimate success, is being made with all the Indian tribes. Schools and Farm instructors are provided by the State. Agents and Inspectors have been appointed whose duty it is to look after the bands committed to their charge; to see that the rations provided are kept up to a uniform standard of excellence; to prevent the Indians being imposed on by worthless and greedy whites; to guard them against the evils resulting from the introduction of spirituous liquors, heavy penalties for which offence are imposed by the State, and generally to aid them in every way to prepare to gain their livelihood as farmers, labourers and operatives, instead of by the chase.

The task undertaken by the people of Canada is a difficult

one—no less than the reclamation of over a hundred thousand savages and the development within them of the essentials of civilization. It is rendered more difficult by the presence of Whites who bring with them the evils of civilized society. As a compensatory advantage the Government has the aid of the various Christian denominations, who have established missions in many places and have won the regard and confidence of the Indians.

The difficulties of the task may be understood from the fact that, though on the reserves in the North-West Territories the Agents only distribute food twice a week, warning each recipient at each distribution that the rations are intended to last for three days, or four as the case may be, yet, so like children are these red men, that they eat up the whole supply at one meal. They have not yet learned the wisdom of being provident for three days ahead. So great is the difficulty of teaching them the initial step toward a higher plane of existence.

The total expenditure on account of the Indian population beyond that provided for by the Indian fund, was in 1885, $1,109,604, of which amount the sum of $478,038 was expended in the purchase of provisions for the destitute Indians.

VII.

THE LAND OF CANADA.

The land of Canada consists of granted and ungranted land. The ungranted land in the older provinces is the property of the provinces and is disposed of by officials appointed for the purpose, in accordance with the provisions of statutes passed by the several Provincial Legislatures.

The land in Manitoba and the North-West Territories belongs to the whole people of Canada and is administered by the Federal Government.

The following is a concise statement of the essential features of the law governing the disposal of Dominion lands in Manitoba and the North-West Territories:—

System of Survey.

The Dominion lands are laid out in quadrilateral townships, each containing thirty-six sections of as nearly one mile square,

or 640 acres, as the convergence of meridians permits; the sections are situated and numbered as in the following diagram.—

N.

	31	32	33	34	35	36
	30	29	28	27	26	25
W.	19	20	21	22	23	24 E.
	18	17	16	15	14	13
	7	8	9	10	11	12
	6	5	4	3	2	1

S.

The townships are numbered in regular order northerly from the international boundary or forty-ninth parallel of latitude, and lie in ranges numbered, in Manitoba, East and West from a certain meridian line styled the Principal Meridian, drawn northerly from the forty-ninth parallel, and throughout the North-West Territories, in ranges numbered westerly from other initial meridians styled the Second, Third, Fourth Meridian, and so on, according to their order westward from the Principal Meridian.

Each section of a township, or 640 acres, is divided into quarter-sections of 160 acres each, styled, according to position, the North-West, North-East, South-West or South-East quarter-section, and to facilitate the descriptions of letters patent of less than a quarter-section, every section is supposed to be further divided into quarter-quarter-sections, or 40 acres, numbered as shown in the following diagram, and called legal sub-divisions:—

N.

	13	14	15	16
W.	12	11	10	9 E.
	5	6	7	8
	4	3	2	1

S.

Disposal of Dominion Lands.

In regard to their disposal the Dominion lands in Manitoba and the North-West Territories may be considered as divided

into two classes, viz.: Even-numbered and odd-numbered sections.

The even-numbered sections, excepting those numbered 8 and 26, which are allotted to the Hudson's Bay Company, are open for homestead and pre-emption entry, and the odd-numbered ones, excepting 11 and 29, which are School Sections, are held for sale, and also as land grants in aid of the construction of Colonization Railways.

Homesteads and pre-emptions.

Any person, male or female, who is the sole head of a family, or any male who has obtained the age of eighteen years, is entitled, on making application before the Local Agent of the District, in which the land he desires to be entered for is situated, and paying an office fee of ten dollars, to obtain homestead entry for any quantity of land not exceeding one quarter-section, or 160 acres, of the class of land open to such entry. This entry entitles the holder to occupy and cultivate the land to the exclusion of any other person, the title remaining in the Crown until the issue of patent for the land.

Any person obtaining homestead entry is entitled to obtain, at the same time, on payment of a further office fee of ten dollars, a pre-emption entry for an adjoining quarter-section, and to use and cultivate the same in connection with his homestead.

The settler is allowed six months from the date of obtaining homestead entry, within which to complete or perfect such entry by taking, in his own person, possession of the land, and beginning residence and cultivation, and if the entry be not perfected within such time it becomes void; except where entry is obtained on or after the 1st of September in any year, and the six months would expire before the 1st of June following, in which case an extension of time to the latter date is granted.

In the case of immigrants, or other persons, intending to settle together, the Minister of the Interior, on requisition signed by them, may authorize any person they may name to obtain homestead and pre-emption entries for them before their arrival in the territory in which the land they desire to occupy is situated, and in such case the time for perfecting entry may be extended to twelve months.

The settler, on proving that he has resided on and cultivated the land for which he has homestead entry during three years from the date of perfecting his entry, is entitled to a patent from the Crown for the same, provided that he is a British subject by birth or naturalization; in case of his death, his legal representatives succeed to the homestead right, but they, or some of them, must complete the necessary duties.

In cases where it is not convenient for the settler to reside upon his homestead for the three years from the date of perfecting entry, the conditions necessary to obtain patent can be fulfilled by his erecting a habitable house on his homestead and residing therein for the three months next prior to date of his application for patent; and from the date of perfecting his entry to the beginning of the three months' residence aforesaid, by his residing, for at least six months in each year, within a radius of two miles from his homestead quarter-section.

He must also in such case break and prepare for crop, within the first year, at least ten acres of his homestead; within the second year he must crop the said ten acres and prepare for crop fifteen acres additional; and during the third year he must crop the twenty-five acres already broken and prepare for crop fifteen acres more.

A homesteader has also the privilege of obtaining a patent for his homestead before the end of three years, by paying the Government price at the time for the land, and proving that he has resided thereon for twelve months from the date of perfecting entry, and that he has brought thirty acres thereof under cultivation.

In case a certain number of homestead settlers, embracing not less than twenty families, with a view to greater convenience in the establishment of schools and churches and for advantages of a similar nature, ask to be allowed to settle together in a hamlet or village, the Minister of the Interior may dispense with the condition of residence on the homestead, but the condition of cultivation must be carried out on each one.

A homestead entry is liable to be cancelled at any time that it is proved that the settler has not resided upon and cultivated his homestead for at least six months in any one year from the date of perfecting entry; but in case of illness, properly vouched for, or in the case of immigrants returning to their native land to

bring out their families to their homesteads, or in other special cases, the Minister of the Interior may grant an extention of time during which the settler may be absent from his homestead, but such leave of absence will not count in the term of residence.

A settler having a pre-emption entry in connection with his homestead, on becoming entitled to a patent for the homestead, is entitled to obtain a patent for his pre-emption by paying the Government price for the land, but such payment must be made within six months after he has become entitled to a patent for his homestead, otherwise his pre-emption right is forfeited.

The right of pre-emption in connection with homestead entry will be discontinued from the 1st of January, 1890.

The privilege of homestead and pre-emption entry only applies to agricultural lands.

Wood for Settlers.

In townships which consist partly of prairie and partly of timber lands, the timber lands are, where it is considered expedient, divided into Wood Lots of not more than twenty acres and not less than ten acres, and any settler not having more than ten acres of wood land on his homestead quarter-section, is entitled, on making application before the Local Agent, to be entered for one of such lots, the applicant paying the price fixed for the same, and on his fulfilling the requirements of the Act, in respect to his homestead, a patent shall issue to him for such wood lot.

The cancellation of the homestead entry also involves the cancellation of such wood lot, and the forfeiture of the purchase-money for the same.

The settler is prohibited from selling, prior to the issue of patent, any of the timber on either his homestead or pre-emption quarter-section, or on the appurtenant wood lot, without permission from the Minister of the Interior, under penalty of fine or imprisonment, or both, as well as the forfeiture of his homestead and pre-emption rights.

Sales.

The odd-numbered sections of Dominion lands, excepting School Sections and where they may be reserved as grants in aid

of Colonization Railways, are open for purchase at such prices and on such terms and conditions as may be fixed from time to time by the Governor-in-Council.

Educational Endowment.

The Parliament of Canada has made a liberal provision in aid of education in Manitoba and the North-West Territories by setting apart Sections 11 and 29 in every township throughout the extent of the Dominion Lands as an endowment for such purpose. These sections are styled School Lands, and are administered by the Governor-in-Council through the Minister of the Interior. It is provided that they shall be disposed of by sale at public auction at an upset price fixed from time to time by the Governor-in-Council; the moneys realized from such sales to be invested in Dominion securities, and the interest arising therefrom paid over to the Government of the Province or Territory within which the lands are situated, towards the support of the public schools therein.

Hudson's Bay Company's Sections.

Sections 8 and 26 in every fifth township, that is, in townships 5, 10, 15, 20, 25 and so on, and Section 8 and three-quarters of Section 26 in all other townships are reserved to the Hudson's Bay Company, under the terms and conditions of the deed of surrender from the said Company to the Crown by which the Company is entitled to one-twentieth of the land within the "Fertile Belt," which is found to be satisfied by the allotment of the said sections.

Settlers will experience no difficulty in obtaining a sufficient supply of fuel. In those portions of Manitoba and the North-West Territories where wood is not found to any great extent, nature has furnished coal as a substitute. In Southern Manitoba, wood may be obtained from the Turtle Mountains, Brandon Hills, and along the banks of the Souris River, and on completion of the Manitoba and South Western Railway to the Souris coal fields, which already reaches to within a few miles of them, settlers will be able to procure coal at any of the stations along the line of that railway.

In that portion of the Province of Manitoba lying north of the

Assiniboine and Qu'Appelle Rivers nearly every half-section of land will be found to contain a certain quantity of wood, and some parts of the tract are very thickly wooded. That portion of the District of Assiniboia which lies to the south of the Qu'Appelle and South Saskatchewan Rivers is fairly supplied with either wood or coal.

An abundant supply of wood will be found in all parts of the District of Alberta with the exception of that portion which lies to the south-east of the Belly and the Saskatchewan Rivers; here, however, as is the general rule in all parts of the North-West Territories, where there is no wood coal is found. On the Belly River are situated what are commonly known as the "Galt Coal Mines," owned by the North-Western Coal and Navigating Company, who during the last year mined and sold about 9,000 tons of coal. This Company has built a line of railway from Lethbridge, where the mines are situated, to Dunmore, on the line of the Canadian Pacific Railway, (108 miles), by which means they are able to furnish coal to Winnipeg and towns along the line of of the Canadian Pacific Railway at a moderate price. Coal mines are also worked at Medicine Hat on the line of the Canadian Pacific Railway, and at Edmonton on the North Saskatchewan River, and within a very short time there will be some opened at several other points.

The whole of the Saskatchewan District is abundantly supplied with timber both for fuel and building purposes, and the western portion contains extensive coal areas.

A large deposit of anthracite coal of first-class quality has been discovered on the line of the Canadian Pacific Railway, a short distance west of Calgary, and arrangements are now being made by capitalists with a view to its development.

Provincial Lands.

In the Province of Ontario it is provided that Public Lands which have been surveyed and are considered suitable for settlement and cultivation may be appropriated as free grants. Two hundred acres is the limit of the Act regulating the disposal of these as free grants. A single man over eighteen years of age, or a married man without children under eighteen residing with him is entitled to a grant of one hundred acres. The male head

of a family, or the sole female head of a family having a child or children under eighteen years of age residing with him or her, may obtain a free grant of two hundred acres and may also purchase an additional one hundred at the rate of 50 cents (2s) per acre.

The settlement duties required are as follows: to have at least 15 acres cleared and under cultivation, of which 2 acres at least are to be cleared and cultivated annually during five years; to have built a habitable house at least 16 by 20 feet in size; and to have actually and continuously resided upon and cultivated the land for five years. The locatee is not bound to remain upon the land all the time during the five years, but may be absent on business or at work, for, in all, not more than six months in any one year. A locatee who purchases an additional 100 acres under the regulations must, within five years from the date of sale, clear fifteen acres and cultivate the same before being entitled to a patent; but he is not required to build a house or reside on the purchased lot where he holds it in connection with a free grant. There are in the Province 123 townships open for location as free grants.

Outside of the free grant townships, uncleared land varies in price from 2 shillings to 40 shillings an acre, according to situation and soil. Cleared and improved farms can be bought at prices ranging from £4 to £10 an acre. The money can nearly always be paid in instalments covering several years.

In the Province of Quebec the Government have surveyed about six million acres of Crown Lands.

These lands purchased from the Government are to be paid for in the following manner: one-fifth of the purchase money is required to be paid the day of sale and the remainder in four equal annual instalments bearing interest at 6 per cent. But the prices at which these lands are sold are so low, viz.: from 1s 5d to 2s 5d, that these conditions are not very burdensome. The purchaser is required to take possession of the land sold within six months of the date of sale and to occupy it within two years. He must clear, in the course of ten years, ten acres for every hundred held by him and erect a habitable house of the dimensions of at least 16 feet by 20. The system of free grants is also followed, any person over 18 years may demand a permit of occupation of 100 acres from any Crown Land Agent, and if at the

end of four years he has cleared 12 acres and built a house he may get his title free of charge.

In the Province of New Brunswick there are three ways by which Crown Lands may be applied for and grants secured. 1st, under the Act relating to free grants of Crown Land; 2nd, under the Labour Act, and 3rd, by purchase at Public Auction. The conditions for obtaining a free grant are that the person approved shall commence clearing and improving the lot assigned to him, within one month after approval, and, within three months, improve the lot to the value of $20 (£4 3s 4d); within one year build a house fit for habitation of not less dimensions than 16 feet by 20, and shall cultivate not less than two acres; within three years cultivate not less than 10 acres and actually, and continuously, cultivate all the land chopped over during such three years.

The person receiving the allotment must be 18 years old or upwards, and can only secure a hundred acres of land.

Under the "Labour Act" the intending settler can apply for a lot not exceeding 100 acres in any part of the Province. The chief difference between this and the free grant plan is that the settler may elect to pay either $20 in cash to aid in the construction of roads and bridges in the vicinity of his location, or to perform labour on such roads and bridges in the vicinity of his location or to perform labour on such roads and bridges to the amount of $10 a year for three years. The conditions of settlement are in other respects the same as under the Free Grant system.

In the case of lands sold at auction, the upset price is 80 cents per acre, in addition to survey fee.

In addition to these Crown Lands open for settlement, there is in the Province a domain of 1,650,000 acres belonging to the New Brunswick Land Company, particulars concerning the disposal of which may be obtained in Edinburgh at the office of the Company.

It may be stated that Prof. Johnston, F.R.S., of England, carefully investigated the Province of New Brunswick, and in his report to Government says:—

"1st. The soil of New Brunswick is capable of producing food for a population of from five to six millions.

2nd. In the capability of growing all the common crops, on

which man and beast mainly depend, the whole Province of New Brunswick taken together, exceeds even the favoured Genesee Valley.

3rd. The climate is an exceedingly healthy one, and it does not prevent the soil from producing crops, which (other things being equal) are not inferior either in quantity or quality to those of average soils in England."

In the Province of Nova Scotia there are nearly four million acres of land belonging to the Crown. Much of this is barren and unfit for cultivation, but there is a great deal in blocks of from five to ten thousand acres of really valuable land, some of it being the best in the Province, quite accessible, and very near present settlements. The price of Crown Lands is $44 (£8 16s sterling) per 100 acres. No distinction is made in the price between 100 acres and smaller lots, as the difference in cost of survey, defrayed by the Government, is very trifling.

In the Province of British Columbia, the land and pre-emption laws are as follow: Every head of a family, widower or single man, eighteen years of age, being a British subject, born or naturalized, has the right to pre-empt a tract of land not exceeding 320 acres in extent, to the northward and eastward of the "Cascade Range" of mountains; and 160 acres in extent in other parts of the Province. Personal residence during a period of two years, reasonable intervals of absence being permitted, and improvements to the average of $2.50 per acre are necessary to complete the pre-emption right. Upon proof of these, the settler is entitled to claim his Crown Grant in freehold to the tract occupied and improved. The price to be paid is $1 per acre, payable in four annual instalments, the first to be paid one year from the date of record. The patent will be granted upon proof by declaration, in writing, of the settler himself and two other persons, of occupation for two years from the date of pre-emption. No person can hold more than one pre-emption claim at a time.

Unsurveyed or unreserved Crown Lands may be purchased in tracts of not less than 160 acres for $1 (4s 2d sterling) per acre payable at time of purchase.

Laws of Intestacy.

In connection with the land systems of Canada, the laws elating to the distribution of property are of interest.

There is no right of entail in Canada. Persons can dispose of their real and personal property by will as they may desire.

The laws relating to intestacy may be summarized as follow:

The laws of all the provinces, except Quebec, are founded upon the common law of England, but it has been so modified and amended that there is a striking lack of uniformity in the provisions of the various provinces, governing the distribution of the property of an intestate. An intestate is one who dies without a will or leaves one which is not valid. The property then has to be distributed among his relatives. The efforts of legislators have been to decide who have the best claims to priority of succession. By the common law of England property cannot ascend; that is, it cannot be inherited by a father, mother or grandparent of the intestate. This law is not now in force in Canada, except in New Brunswick. In that province, however, a recent decision, in the case of Wood versus De Forest, upset all previous decisions, and decided that the mother of an intestate was entitled to the property as next of kin, thus differing from the common law. In Ontario, the law that "property never ascends" has long since been set aside, but care has been taken to prevent grandfathers from inheriting real estate; the most remote descendant of the brother or uncle of the intestate excludes the grandfather. But grandparents share in personal property with uncles and aunts, both being only three degrees distant.

Nearness of Relationship.

There is no distinction as to the half blood or whole blood in intestate personal successions throughout the Dominion, except in Quebec, where a succession coming to brother and sister, nephews and nieces, issue of different marriages, is divided equally between the two lines, paternal and maternal, of the deceased; those of the whole blood sharing in each line, and those of the half blood sharing in their own line only, and where, if there be brothers and sisters, nephews and nieces on one side only, they inherit the whole of the succession, to the exclusion of all the relations of the other line. In Ontario, British Columbia, Keewatin and the North-West Territories, full-blooded and half-blooded relatives inherit equally, except when the inheritance

came to the intestate from some one of his ancestors, in which case all those who are not of the blood of such ancestors are excluded. In Nova Scotia, New Brunswick and Manitoba there is no distinction, but when a brother of whole blood and a brother of half blood are next of kin in Prince Edward Island, the former excludes the latter from succession.

The following shows clearly the working of the laws in the various provinces:—

If a man dies intestate, leaving no wife and child, his property goes to the next of kin, that is, the father of the representatives, in Ontario, British Columbia, Nova Scotia, Prince Edward Island, North-West Territories and Keewatin. In Manitoba it goes to the father; if no father, to the mother, brothers and sisters equally; if neither father, brothers nor sisters, to the mother; if no parents, brothers nor sisters, to next of kin. In Quebec it is divided into two equal portions; one of these goes to the father, and the other is divided amongst the brothers and sisters.

Everwhere if an intestate leaves a father and brother, the former succeeds to the property, except in Quebec, where it is equally divided; but if he leaves a mother and brother, the property is divided equally between them. Of course, if an intestate leaves children, the property goes wholly to them, unless his wife is alive, in which case she gets a third, except in Quebec, where she gets nothing. A widow and mother rank equally in Ontario, British Columbia, North-West Territories, Nova Scotia, New Brunswick and Prince Edward Island. In Manitoba the widow takes precedence, and in Quebec the mother does. Nephews rank equally with brothers; brothers take precedence of grandparents; nephews take precedence of grand nephews.

The above laws relate to personal property, but they also apply in the main to the distribution of real estate. In Quebec and Manitoba the laws are the same for both real and personal property. In Ontario, British Columbia and North-West Territories, the real property of a man dying intestate and childless goes to his father, except that which was obtained from the mother, which reverts in its original owner; in Prince Edward Island and Nova Scotia it goes absolutely to the father.

There is no law of primogeniture in Canada.

To inherit an intestate real property in any of the provinces except Quebec, the heir must have been born in wedlock, and he



cannot succeed if even he has been legitimated by the marriage of his parents subsequent to his birth. Quebec is the only province in which a child born out of wedlock can succeed to intestate property.

VIII

THE GEOLOGICAL SURVEY.

Connected with the machinery by which the lands of the Dominion are managed is a branch of the public service whose special work is to make a study of the mineral wealth of the country.

The geological survey of Canada was instituted by the provincial government in 1843, a grant of £1,500 having been voted for that purpose on the motion of Hon. S. B. Harrison, in consequence of petitions presented by the Natural History Society of Montreal and the Literary and Historical Society of Quebec. Previous to this date, a number of papers having reference to local points in the geology of the provinces of Quebec and Ontario—then constituting Lower and Upper Canada respectively—had appeared, but no extended systematic work had been undertaken, though the necessity of a geological survey had several years before this time rendered itself apparent to many of the more intelligent people of the country. It appears, indeed that as early as 1832, Dr. Rae presented a petition to the House of Assembly, praying for pecuniary assistance to prosecute a geological and statistical survey of the province of Upper Canada—a petition which was not even considered by the Committee of Supply to which it had been referred.

Mr., afterwards Sir, William Logan, on the recommendations of some of the most eminent geologists of the day, was selected to conduct the geological investigations for which provision had been made, and in 1843 assumed the position of provincial geologist.

From this small beginning, the survey has continued to increase in importance and usefulness to the present time, and in the course of its operations some of the greatest additions to the progress of modern geology have been made. After the confederation of the North American provinces, the field of activity of the geological survey became co-extensive with that of the new Dominion. Prof. Sedgwick had designated the survey, as origi-



nally undertaken, a "Herculean task," but that now involved by the addition of half a continent to the two provinces of old Canada, Sir W. Logan, in failing health, found himself unable to undertake, and in 1869 resigned in favour of the present director, Dr. A. R. C. Selwyn. Up to the date of Sir W. Logan's resignation, about 35 annual reports and other publications were issued, making in all over 4,000 pages, giving the results of explorations, and reports on minerals, ores and fossil remains met with in the course of the work. Of these publications the most important is the *Geology of Canada*, a volume of 983 pages which summarizes the results obtained by the survey to 1863. Since 1869, to the present year, the publications of the survey comprise about an equal number of volumes and memoirs with that of the previous period, but the aggregate number of pages is considerably over 6,000, and the number of maps, plans and illustrations accompanying the reports has been largely increased.

In 1881 the offices and museum of the geological survey were removed from Montreal, where they had been situated from the inception of the work, to Ottawa. There are now arranged and displayed in the museum over 15,000 geological specimens, consisting of rocks, ores, fossils, etc., the latter department representing over 3,000 Canadian species. There are also considerable collections of shells, plants, insects, an ethnological collection and the nucleus of a collection of the birds and mammals of Canada. It is anticipated that in the near future, museum accommodation more proportionate to the requirements of the collection, and allowing of its extension, will be provided. The survey is also supplied with a library of scientific reference works of about 6,000 volumes and a well equipped chemical laboratory.

In the more thickly populated eastern portions of Canada the work of the geological survey approximates in character to that of similar surveys in Britain and Europe; but, even here, a larger portion of the time of the geologist or his assistants is necessarily occupied in correcting and adding to the maps of the districts in which he may be at work, a circumstance rendered necessary by the want of really accurate topographical surveys. In the newer provinces and in the great uncultivated northern and western portions of the continent, however, the geologist must often be as well the pioneer, and is frequently obliged to carry out running surveys and construct reconnaissance maps of

vast tracts of country through which no instrumentally measured lines have as yet been carried. While not forgetting that his more special work is geological, the explorer must also endeavour to bring back with him such observations on the meteorology, botany, zoology and even details as to the number and character of the natives inhabiting these imperfectly known regions as may be of use in extending our knowledge of them. It will easily be understood from this explanation that geological work in such new districts is replete with interest and may frequently result in bringing to light important unknown or imperfectly recognized sources of wealth, such as the great new coal fields of the North Western plains or the petroleum deposits of the Athabasca. The work done in these regions is necessarily of an incomplete character, and the maps and reports published, while in themselves important advances in knowledge, must eventually be superseded, as settlement progresses, by others of a more complete and final kind. It thus happens that a considerable proportion of the energy of the survey has necessarily been directed to geographical work, and the surveyors engaged in these remote districts, through which no recognized means of communication exist, have frequently to contend with both hardship and danger in their progress.

Of work of this class carried out within the last fifteen years, and which has largely added to our knowledge of the topography of the Dominion, may be mentioned Dr. Selwyn's explorations in British Columbia in 1871 and 1875, and in the North-West Territory in 1873; Dr. Dawson's explorations on the mainland of British Columbia, in the Queen Charlotte Islands, from the Pacific Coast to Manitoba by way of the Peace River, and in the Rocky Mountains and elsewhere; Dr. Bell's explorations in the country between Lake Superior and the Hudson's Bay, on the Lower Athabaska, Nelson and Churchill Rivers, the coast of Hudson's Bay and other adjacent regions; also explorations by Prof. Macoun on the Peace River, Messrs. Richardson, McOuat and Low, north of Lake St. John, in the vicinity of Mistassini Lake and on the Rupert River, together with work by Messrs. Ells, McConnell and Tyrell in various parts of the North-West Territory; by Mr. Bowman in British Columbia and Mr. Lawson on and around the Lake of the Woods.

In the Eastern Provinces, above alluded to, consecutive and

more finished work is possible, and already the greater part of New Brunswick, the whole of Cape Breton and other portions of Nova Scotia, Quebec and Ontario have been geologically mapped in considerable detail—for the most part on a scale of 4 miles to the inch.

While Canada already makes a respectable showing in the matter of mineral products, its development in this respect is by no means commensurate with the extent and value of its actual mineral wealth, a fact due not only to the lack of capital for the extraction and elaboration of the minerals, but also to the want of experience with which many of the attempts in this direction have been undertaken. The operations of the Geological Survey are supplying as rapidly as possible a trustworthy knowledge of the fundamental structures of the more important regions, while the examinations of special mining districts and the statisticial information, which the survey has now undertaken to procure and publish, will tend still further to inspire confidence in foreign capitalists.

The total staff of the survey at present engaged in Geological, Natural History and accessory work is about forty-five, to which, each summer, considerable temporary additions are made for field work.

From 1870 to date, the total average annual expenditure in connection with the Geological Survey has been about $52,000.

IX.

PUBLIC DEBT OF CANADA.

The public debt of Canada on the first of July, 1885, was as follows:—

Gross debt		$264,808,520
Made up thus:—		
1. Funded and unfunded debt:		
(a) Payable in England	$154,105,123	
(b) Payable in Canada	68,586,890	
2. Miscellaneous	22,574,186	
3. Temporary loans	18,985,908	
Banking acounts	556,413	
Total gross debt		$264,808,520

ASSETS.

1. Investments:		
(a) On account of sinking fund	$ 15,777,973	
(b) Other investments	34,367,966	
(c) Bank deposits	130,000	
2. Miscellaneous	1,794,296	
3. Provincial accounts	7,501,548	
4. Banking accounts	8,664,954	
Total assets		$ 68,236,7
Total net debt		$196,571,7

The Provincial indebtedness allowed under the Union Act a by subsequent Acts of the Federal Parliament, relieving t provinces of their total pre-confederation indebtedness, is follows:—

Province of Canada, 1867	$ 62,500,000	
Nova Scotia, 1867	8,000,000	
New Brunswick, 1867	7,000,000	
Nova Scotia, 1869	1,186,756	
Manitoba, 1870	472,090	
British Columbia, 1871	1,666,200	
Prince Edward Island, 1873	4,927,060	
All the provinces under Act 1873	13,386,989	
" " " " 1884	7,172,297	$106,311,3
New indebtedness since Confederation		$ 90,260,3

This new indebtedness has been created by expenditure c account of public works, upon which the following sums (sin 1867) have been expended up to 30th June, 1885:—

On the canal system	$ 28,543,078
" " railway "	92,575,599
" light-houses and navigation	8,433,100
" acquisition and development of the North-West.	5,356,035
" government buildings and miscellaneous	12,432,825
Total	$147,340,697

Thus, the people of Canada, since 1867 have not only increase their public debt by the sum of $90,000,000, but have paid o from their own resources the sum of $57,000,000, to facilitate th construction of these public improvements.

The total amount expended on these, prior to Confederatio was: on railways and canals, $52,944,175; public works, $10,690 917, making a total expenditure of $210,975,789.

In addition to the amounts thus expended, the Government of Canada have loaned various sums of money in aid of enterprises more or less national in character. These sums are included in the "other investments" given in the assets. The principal are:

Loan to Canadian Pacific Railway at 4 per cent *....	$20,000,000
" " " " " " †....	9,880,912
" to Quebec Harbour Commissioners (bonds)....	1,955,000
" for improving the St. Lawrence.....	2,190,000
" graving dock (Quebec).....	672,000
" St. John River and railway extension.....	278,800
" Northern Railway (bonds).....	73,000
" Montreal Harbour Commissioners.....	76,000

Those assets yield on an average 3¾ per cent. interest to the Government.

Besides the amounts expended on Government railways, and in loans to various enterprises, the Government of Canada has given bonuses to railways, other than the Canadian Pacific, to aid in their construction. Up to June 30th, 1885, the amount thus paid was $611,245.

The rate of interest paid on the net debt in 1867 averaged $5.40 per cent. In 1885 the average interest paid was $3.80 per cent. The various financial re-arrangements, made since the Union, have resulted in a reduction of $1.60 per cent. in the rate of interest.

It is worthy of note that the public debt, unlike the national debts of most countries, has not been incurred for expensive wars, or other unproductive objects, but for the prosecution of works of a permanent character, rendered necessary from the fact that Canada has been obliged to keep pace with the progress in railways which has characterized her neighbors to the south, by which population has been enabled to find fresh fields for settlement far away from the rivers and streams along which settlement originally took its course.

It is also worth remembering in this connection that the ungranted and unpledged Crown Lands belonging to the Dominion would, at 3s an acre, pay the whole public debt.

* This loan is secured to the Government by a deposit of $20,000,000 of the Company's first preference mortgage bonds, at present quoted at 104, and will be paid back to the Government by the 1st July, 1886.

† This loan is secured by a lien on the land grant of the Company, but arrangements have been made by which the Government give the Company a smaller land grant and extinguish the debt of the Company to the Government.

X.

REVENUE AND EXPENDITURE.

Under the Act of Union, all duties and revenues over which the Parliament of Canada has the power of appropriation are directed to be paid into the "Consolidated Revenue Fund." Included in this general fund is a specific fund, termed the "Consolidated Fund," which consists of the ordinary expenditure and income of Canada.

Under the general head of "Consolidated Revenue Fund," the accounts for Canada for the fiscal year ended June 30th, 1885, were :—

RECEIPTS.

Consolidated Fund	$32,797,002
Loans	44,145,515
Premium and discount loan account	140,483
Open accounts	1,335,844
Total	$78,418,844

EXPENDITURES.

Consolidated Fund	$35,037,060
Redemption	18,160,265
Premium and discount loan account	502,587
Railway subsidies	403,246
Open accounts	24,518,223
Total	$78,621,381

The revenue placed to account of the Consolidated Fund during the same year was, as stated in the general account, $32,797,002, and the expenditure $35,037,060. Of these receipts, Customs Duties amounted to $18,935,428, and Excise to $6,449,101. Other receipts, on account of this Fund, were $7,412,472. The expenditures consisted of charges for debt and subsidies to the Provinces, $15,248,356; ordinary expenditure (departmental), $12,591,827; charges on revenue, $7,193,876.

These receipts have been exceeded in some previous years. In 1883 the revenue was $35,794,650; customs yielding $23,009,582. In 1882 the revenue was $33,383,455, of which the sum of

$21,581,570 was from Customs. The receipts from Excise in the fiscal year ended the 30th of June, 1885, were the largest of any year in the history of Canada.

The receipts on account of land sales, which are credited to capital account, amounted in 1885 to $393,618 In previous years the receipts were: In 1877, $3,799; 1878, $19,424; 1879, $23,828; 1880, $120,479; 1881, $131,124; 1882, $1,744,456; 1883, $1,009,019; 1884, $951,636.

The falling-off last year is to be accounted for by the disturbed condition of the North-West, owing to the insurrectionary movement headed by Louis Riel, which, breaking out in March, affected the advance of settlement for the year.

The revenue derived from railways belonging to the Government was in 1885, $2,624,243, and the expenditure, $2,749,710.

It has been shown that, during the last fiscal year, the expenditure exceeded the revenue, the deficiency being $2,240,059. That deficit is largely caused by the extraordinary expenditure for the year occasioned by the Riel rebellion, the cost of which, included in the year's accounts, was $1,697,851. The following shows the relation of expenditure to income during the period of Confederation:—

	Receipts in excess of expenditure.	Expenditure in excess of receipts.
1868	$ 101,835	.....
1869	341,090	.....
1870	1,156,717	.....
1871	3,712,479	.....
1872	3,125,345	.....
1873	1,638,821	.....
1874	888,776	.....
1875	935,644	.....
1876	.....	$1,900,785
1877	.....	460,028
1878	.....	1,128,146
1879	.....	1,938,000
1880	.....	1,543,227
1881	4,132,743	.....
1882	6,316,352	.....
1883	7,064,493	.....
1884	754,256	.....
1885	.....	2,240,059

The proportion of the whole revenue paid into the Consolidated Fund, raised by taxation year by year since Confederation, is as follows:—

1868	85.49 per cent.	1877	80.22 per cent.
1869	77.28 "	1878	79.69 "
1870	84.30 "	1879	82,05 "
1871	84.45 "	1880	82.06 "
1872	85.52 "	1881	80.78 "
1873	84.64 "	1882	82.52 "
1874	83.12 "	1883	81.74 "
1875	83.60 "	1884	80.00 "
1876	82.41 "	1885	77.40 "

Taking Public Works, including Government railways, the receipts and expenditures have been as follows:—

	Receipts.	Expenditures.
1868	$ 901,466	$ 626,286
1869	918,933	692,853
1870	1,006,845	811,630
1871	1,146,240	831,072
1872	1,211,729	1,005,443
1873	1,316,636	1,496,185
1874	1,509,915	2,389,680
1875	1,432,360	2,139,573
1876	1,479,232	2,044,497
1877	1,807,076	2,351,832
1878	2,034,484	2,471,438
1879	1,863,149	2,680,979
1880	2,167,401	2,329,626
1881	2,682,924	2,703,666
1882	2,711,134	2,893,513
1883	3,101,134	3,264,877
1884	3,055,792	3,302,792
1885	3,065,502	3,270,810

The expenditure in 1885 on account of the Consolidated Fund by heads was as follows:—

Interest on Public Debt	$9,419,482
Charges of Management	232,641
Sinking Fund	1,482,051
Premium, Discount and Exchange	154,855
Subsidies to Provinces	3,959,327
Civil Government	1,139,495
Government of the North-West	95,316
Administration of Justice	627,252
Mounted Police, Water, and Parliamentary	621,286

Penitentiaries	287,552
Legislation	649,538
Geological Survey and Observatories	115,841
Agriculture and Statistics	91,381
Immigration and Quarantine	506,408
Marine Hospitals	55,391
Pensions, Superannuations, etc	293,515
Defences	2,707,758
Mail steamship subsidies	261,779
Public Works, including railways	2,388,389
Fisheries	273,174
Lighthouse and coast	532,446
Steamboat inspection	23,211
Insurance superintendence	10,223
Grants to Aborigines	1,109,604
Dominion Lands	178,727
Dominion Steamers	227,433
Investigation of wrecks, life-boats, registry of shipping, examination of masters and mates	14,760
British Association, Royal Society, International circum-polar observatories, Academy of Arts, Hudson's Bay expedition, etc	126,632
Miscellaneous	258,716
Charges on revenue:—	
Customs	791,538
Excise	309,268
Weights, Measures, and Gas	84,978
Inspection of Staples	848
Adulteration of Food	14,948
Culling timber	50,580
Post Office	2,488,315
Public Works, including Railways and Canals	3,448,593
Minor Revenues	4,818

It is noteworthy that the expenditure on account of Defences has increased from $550,450 in 1877 to $1,009,906 for ordinary Militia purposes. If we place under this head the expenditure incurred for the protection of the North-West, exclusive of the extraordinary one on account of the rebellion, Canada expended last year, for purposes of defence, the sum of over $1,500,000. To this extent the country seeks to keep itself in readiness to relieve the Mother Country of expense in time of peril to the Empire.

XI

TRADE AND COMMERCE.

The Canadian fiscal year ends on the 30th of June. In the fiscal year 1884–5, the declared value of goods imported into Canada was $108,941,486 and that of goods exported was $89,-238,361. The excess of imports over exports was $19,703,125, and the total value of the external trade, $198,179,847, which is equal to $38.12 per head of the population. The exports were equal to $17.16 per head.

In 1885, the principal articles imported were: iron and steel manufactures, $11,657,189; cottons, $6,241,283; woollens, $9,053,-626; raw materials, $20,035,767; silk manufactures, $2,305,168; metal manufactures other than iron and steel, $2,309,771. The value of the total import of manufactures of all kinds was $49,-059,058. The imports of tea amounted to $3,573,330; of spirits and wine, to $1,512,695; of sugar above No. 9 Dutch Standard, to $1,811,365. In raw materials, the import of sugar, for refining purposes, was 134,531,895 pounds, valued at $3,225,070; that of hides and pelts, $1.788,914; of wool, $1,342,405; of raw cotton, 23,727,525 pounds, valued at $2,493,283.

The exports were as follow:—

	Produce of Canada.	Produce of other countries.	Total.
	$	$	$
Produce of the mine	3,639,537	196,933	3,836,470
Fisheries	7,960,001	16,312	7,976,313
Forest	20,989,708	1,383,597	22,373,305
Animals and their products	25,337,104	1,166,890	26,503,994
Agricultural	14,518,293	4,602;073	19,120,366
Manufactures	3,181,501	612,728	3,794,229
Miscellaneous	557,374	101,113	658,487
Total	76,183,518	8,079,646	84,263,164
Coin and bullion	.....	.....	2,026,980
Estimated short returned at inland ports	.....	.....	2,948,217
Grand total	.....	.....	$89,238,361

It will be seen that the greatest exports were under the head of "animals and their products." A very considerable change has taken place in the proportions of each class of exports to the whole exports, since confederation. In 1868 the proportion was; agricultural products to domestic exports, 36.59 per cent; animals and their products, 14.24 per cent; forest products, 37.28 per cent; fisheries, 6.93 per cent; products of the mines, 2.98 per cent; manufactures and miscellaneous making up the remainder.

In 1882 the proportion was :—agricultural productions, 35.61; animals and products, 21.72; forest products, 26.57; fisheries, 8.17; and products of the mine, 3.42 per cent.

In 1885 the proportion was :—agricultural products, 25.08; animals and their products, 32.02; products of the forest, 24.06; fisheries, 9.13, and products of the mine, 4.17 per cent.

The development of the exports of animals and their products is marked. Of cheese, Canada in 1868 exported 1,577,072 lbs.; in 1885 the export of that article produced in Canada, 79,655,367 lbs., valued at $8,265,240. The latest accessible returns for the United States, show that the export of cheese (in 1884) was 11,663,713 lbs. Canada in fact stands at the head of cheese exporting countries.

Of the export of Canadian cheese in 1885, 78,841,460 lbs. were sent to Great Britain.

Of eggs, Canada exported 11,542,713 doz.; chiefly to the United States.

The growth of the Canadian cattle trade may be gleaned from the following table of exports taken from the Trade Returns:—

Year.	Beeves.	Sheep.	Hogs.
1877	25,357	141,187	14,541
1876	22,656	209,899	2,063
1878	29,925	242,989	3,201
1879	46,529	308,093	6,803
1880	54,943	398,746	6,229
1881	62,277	354,155	2,819
1882	62,106	311,669	3,263
1883	86,396	308,474	3,868
1884	89,263	304,403	3,883
1885	143,003	335,043	1,652

The aggregate trade of Canada, on the basis of total exports and imports since confederation is exhibited in the following table:—

—	Total exports.	Total imports.	Total exports and imports.
	$	$	$
1868	57,567,888	73,459,644	131,027,532
1869	60,474,781	70,415,165	130,889,946
1870	73,573,490	74,814,339	148,387,829
1871	74,173,618	90,092,971	170,266,589
1872	82,639,663	111,430,527	194,070,190
1873	89,789,922	128,011,281	217,801,203
1874	89,351,928	128,213,582	217,565,510
1875	77,886,979	123,070,283	200,957,262
1876	80,966,435	93,210,346	174,176,781
1877	75,875,393	99,327,962	175,203,355
1878	79,323,667	93,081,787	172,405,454
1879	71,491,255	81,964,427	153,455,682
1880	87,911,458	86,489,747	174,401,205
1881	98,290,823	105,330,840	203,621,663
1882	102,137,203	119,419,500	221,556,703
1883	98,085,804	132,254,022	230,339,826
1884	91,406,496	116,397,043	207,803,539
1885	89,238,361	108,941,486	198,179,847

Taking into consideration the fall in prices experienced during the whole of the year 1885, the exports of last year more than maintained their former record. Judging by quantities exported, Canada sent out a larger amount of her products than in previous years.

The imports have, however, decreased, even when due allowance is made for the reduction in prices which ruled throughout the world.

An analysis of the imports in 1885 and in 1875 will show the changes that have taken place:—

Imports by classes (home consumption.)

	1875.	1885.
Manufactures of iron and steel	$ 19,095,716	$ 11,657,189
" metals other than iron	1,491,384	2,309,771
" silk	2,219,160	2,305,168
" cottons	9,830,836	6,241,283
" woollens	12,767,575	9,053,626
All other manufactures	21,339,991	17,258,514
Total manufactures	66,744,662	49,059,058
Food and drink	29,042,973	18,089,941
Raw material	10,652,870	20,035,767
Coin and bullion	2,210,085	2,954,244
Miscellaneous	10,968,067	12,571,009
Total imports (home consumption)	$119,618,657	$102,710,019

There has been a decrease of $17,685,604 in the import of manufactured articles, and an increase of nearly $9,500,000 in the import of raw materials. There has also been a decrease in the importation of articles of food and drink, during the years compared, of $10,953,032. These figures accentuate the value to the country of the fiscal policy adopted in 1879 by the people of Canada. Situated side by side with the United States, Canada found itself exposed to two disturbing influences. When times were good in the United States, and the demand was equal to the supply, the policy of manufacturers and dealers in grain, etc., was to add something to the home market price, if the goods were wanted for the Canadian market. When times were bad, the United States manufacturers and others made a slaughter market of Canada, and poured their goods into the country, entailing ruin upon Canadian manufacturers and millers. Viewed broadly, the result was not beneficial to the Canadian consumer, for if he paid less in some years, he paid so much more in others that the average was against his pocket; while the oft-recurring disturbances prevented the application of capital to manufacturers in Canada. After mature deliberation and much discussion, the people of Canada arrived at the conclusion that it would pay the country to make provision, by legislation, against the evils experienced. A fiscal policy was arranged and put into operation in the spring of 1879. The effect is seen in the analysis above given. The prices of manufactured articles to the consumer have not increased. The products of the farm are not higher in price to the urban population. The manufacturer and the farmer retain possession of the market, and the industrial history of the country has ceased to be a record of a few successful years sandwiched between years in which failures in business were numerous.

The record of failures is good evidence of the important results which have followed from the success of the effort to minimize the injurious influence of our neighbors over our business.

In 1873 and 1874, which were good years in the United States, the failures in Canada numbered 1,960, with liabilities amounting to $20,030,000—an average of $10,000,000 a year.

In 1875-9, which were years of depression in the United States, the failures in Canada averaged $26,630,000 a year.

In 1880 the new fiscal policy went into full force in Canada. During the six years ended 31st of December, 1885, the average amount of yearly liabilities of insolvents was only $10,900,000, notwithstanding the fact that the last two years were years of great depression in the United States. The failures in 1884 covered liabilities of but $8,743,049.

The following analysis will show the commercial relations of Canada with Great Britain and other countries during the last decade:—

	Percentage of Canadian imports from:			Percentage of aggregate trade with:		
	Great Britain.	United States.	Other countries.	Great Britain.	United States.	Other countries
1876	43.00	48.63	8.37	47.39	43.25	9.36
1877	41.09	53.28	5.63	47.12	44.77	8.11
1878	41.04	53.33	5.63	48.89	43.32	7.79
1879	38.58	54.44	6.98	44.22	46.69	8.99
Average	40.93	52.42	6.65	46.90	44.52	8.57
1880*	48.08	40.88	11.11	50.29	39.26	10.45
1881	47.57	40.07	12.36	51.25	38.74	10.01
1882	44.91	42.87	12.22	44.64	44.80	10.56
1883	42.75	45.50	11.73	43.06	42.41	14.53
1884	40.13	46.67	13.20	41.94	42.98	15.02
1885	40.31	45.90	13.80	42.02	43.34	14.64
Average	44.00	43.60	12.40	45.53	41.91	12.56

Under the new tariff Canada has broadened the area from which she draws her supplies. During the four years, 1876-79, she obtained but 6,65 per cent. of her imports from countries outside of Great Britain and the United States. During the period 1880-85, the average of her imports from countries other than the two named was 12.40. At the same time the percentage of total imports from Great Britain has increased during the period 1880-85, and that of total imports from the United States decreased. It may therefore be said generally that the effect of the new tariff has been to decrease Canadian imports from the United States by about 9 per cent., and to distribute that amount between Great Britain and "other countries."

* New tariff in force.

The proportions of dutiable and free goods imported by Canada from Great Britain and the United States of America are as follow:—

	From Great Britain.		From the United States.		From other countries.	
	Dutiable.	Free.	Dutiable.	Free.	Dutiable.	Free.
1876	79.81	20.49	46.31	53.69	82.21	17.19
1877	83.19	16.81	45.86	54.11	81.41	18.59
1878	85.86	14.14	48.25	51.75	81.17	18.83
1879	87.34	12.66	54.31	45.69	91.77	8.23
Average	83.92	16.08	48.68	51.32	84.14	15.26
1880*	81.39	18.64	66.67	33.33	82.49	17.51
1881	82.27	17.73	69.83	30.17	89.44	10.56
1882	81.94	18.06	68.22	31.78	81.07	18.93
1883	78.25	21.75	68.98	31.02	81.07	18.93
1884	75.60	24.40	70.89	29.11	79.77	20.23
1885	74.14	25.26	66.22	33.78	80.01	19.99
Average	78.92	20.97	68.46	31.53	82.30	17.70

Two results which have followed the adoption of the present tariff are expressed in the above table. First, the dutiable goods from Great Britain have decreased, while the goods admitted free of duty have increased. Second, the dutiable goods imported from the United States have increased twenty per cent., while the goods admitted free of duty from that country have decreased nearly twenty per cent. The toll Canada imposes on her imports from the Mother country has decreased 5 per cent., while that she imposes on United States' goods has increased 20 per cent.

EXPORTS OF CANADA.

Being goods produced in Canada for the year ended June 30th, 1885:—

THE MINE.

	VALUE.		VALUE.
Coal	$1,468,166	Salt	12,326
Gold	999,007	Antimony	33,700
Copper	246,230	Other minerals	385,746
Iron	132,074		
Phosphates	362,288	Total	$3,639,537

* New tariff in force.

THE FISHERIES.

$7,960,

ANIMALS AND THEIR PRODUCTS.

	VALUE.		VAL
Animals	$10,376,235	Hides and Skins	6
Meat	854,145	Wool	1
Butter	1,430,905	Sundries	1
Cheese	8,265,240		
Eggs	1,830,632	Total	$25,3
Furs	1,626,826		

THE FOREST.

	VALUE.		VAL
Ashes, pot and pearl	$ 172,935	Shingles	1
Fine wood	316,647	Railway sleepers	1
Lumber, deals, battens, planks	15,668,044	Square timber	3,4
Logs	225,858	Other products	7
Masts and Spars	42,461	Total	$20,9

AGRICULTURAL.

	VALUE.		VAL
Barley and rye	$ 5,683,706	Peas	2,0
Flax	59,904	Seeds	1
Flour	556,530	Vegetables	3
Green fruit	635,240	Wheat	1,9
Hay	1,270,525	Other produce	4
Malt	280,137		
Oatmeal	250,319	Total	$14,5
Oats	893,513		

MANUFACTURES.

	VALUE.		VAL
Books	$ 155,511	Ships	2
Biscuits	18,936	Prepared tobacco	
Carriages	17,765	Furniture, etc	6
Extract of Hemlock	203,211	Woollens and cottons	
Iron and hardware	140,724	Musical instruments	1
Leather, boots and shoes, saddlery	513,380	Cordage	
Liquors	13,172	Agricultural Implem'ts	
Machinery	86,163	Other articles	6
Sewing Machines	69,235	Total	$ 3,1

The growth of the trade and commerce of the country since Confederation is seen in the statistics relating to banking, as given in the following table:—

YEAR	ASSETS.	LIABILITIES.	DEPOSITS.	NOTES IN CIRCULAT'N.	SPECIE.	DISCOUNTS.	RESERVE.
1868..	$ 77,872,257	$ 43,722,647	$ 32,808,104	$ 8,307,079	$8,879,814	$ 50,500,316	.....
1874..	194,579,450	122,031,485	81,366,965	29,046,273	7,954,993	133,781,260	.....
1877..	177,422,041	99,125,162	69,763,668	21,922,749	6,788,810	126,169,577	.....
1885..	222,091,270	141,713,644	106,752,992	31,334,621	6,826,337	158,209,174	$17,784,433

The paid up capital invested in banking on the 30th September, 1885, was $61,636,424.

In addition to the notes issued by the chartered banks, the Government issues notes of various denominations from fractional currency up to $1000, the issue of $5, $10 and $20 being small, so as to put practically into the hands of the banks the issue of notes of these particular denominations. In the years named, the issue of these Government notes on the 30th September was as follows:—1868, 4,205,000; 1874, $12,428,206; 1877, $11,395,548; 1885, $17,836,378.

Besides this circulation of notes of the banks and the Government of Canada, there are about $500,000 United States notes in circulation, during recent years. Canada requires, therefore, for the business wants of her people, the sum of $49,700,000.

XII

THE TRANSPORT SERVICE OF CANADA.

For fifty years, Canadians have kept before them an ideal Canada, to attain which they have made continuous and strenuous efforts.

That ideal comprised a British North America, united, instead of dissevered and antagonistic; expanded and broadened by the acquisition of the Hudson's Bay and North-West Territories, and bound together with a complete transport service through the agency of canals and railways, telegraph and steam-ship lines.

The idea of Confederation is as old as the century. It became

an accomplished fact less than 13 years ago, when Prince Edwa Island cast in her fortunes with the Dominion.

The idea of the expansion of Canada by the acquisition of tl North-West was originated at an early date and for many yea formed a "stock" subject for newspaper discussion.

In 1835 Mr. Henry Fairbairn proposed a line of railway fro Halifax, Nova Scotia, to the St. Lawrence River, as an imper tive necessity, "if it is desired by the Imperial Government maintain an equality of commercial advantage with the neig bouring United States; for the splendid advantages of the Ra way System are well understood in that country, where gre navigable rivers are about to be superseded by railways of va magnitude" . . . . "If then," he added, "we would content with these advantages in our North American province it is only by similar works that we can bring to the Atlantic tl agricultural products of the Colonies and secure the stream emigration which otherwise, with the facility of inland trar portation, will be rapidly diverted to the Western regions of t United States."

The idea of a transcontinental railway from ocean to ocean w mooted by Major Carmichael-Smyth in an open letter, which w addressed to Mr. Haliburton (author of "Sam Slick") and pu lished in 1847. It was accompanied by a map of the route pr posed by him, and, singular to say, the Canadian Pacific Railw takes the very route then suggested. The view he took may gathered from a sentence, "This great national railway from t Atlantic to the Pacific is the great link required to unite in o powerful chain the whole English race, which will be the mea of enabling vessels steaming from our magnificent colonies from New Zealand, Van Diemen's Land, New South Wales, Ne Holland, from Borneo and the West Coast of China, from t Sandwich Isles and a thousand other places—all carrying the ri production of the East, to land them at the commencement of t West, to be forwarded and distributed throughout our Nor American provinces and delivered within thirty days at the poi of Great Britain."

Encouraged by the success of his efforts to stir the few to who this letter to the renowned "Clockmaker's" author had been sen he published a pamphlet bearing date February, 1848, in whi

he elaborated the views contained in his letter. The title is an argument in itself. It reads as follows:

"The employment of the people and the capital of Great Britain in her own colonies, at the same time assisting emigration, colonization and penal arrangements, by undertaking the construction of a great national railway between the Atlantic and Pacific, from Halifax Harbour, Nova Scotia, to Fraser's River, New Caledonia."

Like Mr. Fairbairn, Major Carmichael-Smyth proposed to make the construction of the railway subsidiary to a grand scheme for the settlement of the regions traversed by it, in the interests of the Empire at large, as well as in those of Canada. Had these far-seeing plans been taken up when mooted, Canada would have been at least two generations in advance of her present position, whilst "Greater Britain" would have been in a much higher state of development than it is.

The idea of a trans-continental railway, which apparently created no lasting impression in England, took root in the Canadian mind. The railway, though at first thought chimerical, then regarded as feasible but impossible for Canada owing to the cost, was at length undertaken and finished in four years (4) and nine months, from the day on which the contract with the Canadian Pacific Railway Co. became law.

Our ideal Canada is not yet completely realized. An air line railway connecting Montreal with the Atlantic Ports of St. John and Halifax is desirable. Appropriations have been made for it by the Parliament of Canada. A contract has been signed with responsible parties, interested in the Canadian Pacific Railway, with which the road when finished will be amalgamated; thus adding about 560 miles to the Canadian Pacific Railway. On its completion, Montreal, as the *entrepot* between the wheat fields of the West and the Atlantic, will be placed under the most favourable circumstances both for summer and winter trade.

The ideal Canada will become an accomplished fact when, under the perfected arrangements of transport, Canada succeeds in attracting the population of Europe and filling up her broad acres with a prosperous people—a source of strength to the empire.

Holding these views and "showing their faith by their works" Canadians take pride in their achievements in railway building and canal construction, which must be the apology for a somewhat extended description of our transport system.

The Railways of Canada.

The development of our present railway system, of over 11,000 miles in length, synchronises with the political life of the present Premier of Canada, Sir John Macdonald, for, upon his entrance to public life (1844) there were but 14 miles of railway in operation. In 1849 a general Act was passed by the Legislature of the Province of Canada, known as the Guarantee Act, which empowered the Government to aid any railway not less than 70 miles in length by guaranteeing the interest at 6 per cent. per annum for a term of years. This gave indirectly a powerful stimulus to railway construction, and the first series of railways owed their development to it. In 1850 Nova Scotia commenced an agitation for the Intercolonial Railway, under the guidance of the Hon. Mr. Howe.

In 1852 the Grand Trunk Railway was incorporated and was built between 1852 and 1858, during which period, the Great Western, Northern, Buffalo and Lake Huron, Cobourg & Peterboro', and a number of other railways were so successfully prosecuted that by the end of 1859 there were 1,888 miles of railway in Upper and Lower Canada. In the Eastern provinces, three lines of railway, covering 266 miles, were completed; thus, at the beginning of 1860, there were 2,054 miles in all Canada.

During the ten years, 1860-70, there was little if any increase in railway mileage in the two provinces of Upper and Lower Canada.

The statistics of railways opened in Canada at the time of Confederation (1867) are as follow:—

Name.	Miles.	Expenditure by Government.	Expenditure from other sources.	Total cost.
		$	$	$
Grand Trunk	905	15,142,633	69,092,765	84,235,398
Montreal and Champlain	83	.....	2,417,680	2,417,680
Buffalo & Lake Huron	160	.....	8,000,780	8,000,780
Great Western	363	2,810,500	21,966,930	24,777,430
Northern	95	2,311,667	3,146,122	5,457,789
London & Port Stanley	24	.....	1,032,850	1,032,850
Cobourg & Peterboro'	32	.....	900,000	900,000
Erie & Ontario	17	.....	300,000	300,000
Ottawa and Prescott	54	.....	2,008,994	2,008,994
Carillon & Grenville	13	.....	98,761	98,761
St. Lawrence & Industry	12	.....	54,100	54,100
Port Hope & Beaverton	56	.....	1,993,580	1,993,580
Welland	25	.....	1,622,843	1,622,843
Brockville & Ottawa	87	.....	2,647,004	2,647,004
Stanstead, Shefford & Chambly	43	.....	1,216,000	1,216,000
St, John & Shediac	148	4,073,385	.....	4,073,385
St. Andrew's & Quebec	99	110,000	2,000,000	2,110,000
St. Stephen's Branch	19	190,000	110,000	300,000
Nova Scotia	145	6,781,254	.....	6,781,254
Total for all Canada	2,380	$31,419,439	$118,608,417	$150,027,856

Under the Act of union, the Intercolonial Railway was begun by the Federal Parliament and completed in 1878. The Federal Government also own the railway in Prince Edward Island. In all, the railways owned by the Dominion Government have a length of 988 miles. The amount expended in construction up to the 30th June, 1885, is $47,281,951.

The latest addition to the trunk lines of the country is the Canadian Pacific Railway, extending from Quebec City to Vancouver on the Straits of Georgia, separating Vancouver Island from the mainland of British Columbia.

This line, with the Intercolonial, forms an imperial work of great importance, not only to Canada but to the British Empire. The imperial character of the great line which thus joins the one ocean to the other warrants a fuller statement of the views entertained of its great value. It is the future highway between Great Britain and most of her important colonies in the Pacific Ocean. It is the shortest and best route from England to China, Australia and New Zealand, and over the road, in the near future, must military and postal communications be maintained between the Home Government and its leading dependencies. The necessity for the maintenance of such expensive posts as Gibraltar, Malta and Aden seems largely cancelled by the opening of a route all the way over British territory, far removed from hostile surroundings, and requiring no coaling stations nor fortifications on exposed and isolated promontaries, in time of war, involving enormous outlay for their protection and maintenance. It was a singular coincidence, and perhaps a prophetic omen of the future imperial importance of this railway, that the first loaded train that passed over its entire length, from ocean to ocean, was freighted with naval stores, belonging to the Imperial War Department, transferred from Quebec to Vancouver. It was a remarkable commercial incident that the first car of ordinary merchandise consigned to British Columbia was a cargo of Jamaica sugar, refined in Halifax, and sent overland to the Pacific terminus, nearly 4,000 miles in one stretch under the flag of Great Britain.

Although we all know that the surface of the globe is spherical, in judging of distances and directions the mind generally follows the older theory of its being a plane; for which reason

we often estimate the positions and the shortest courses betwee places very erroneously, and the wider they are apart the mor liability there is to judge very imperfectly of their relativ position. The popular idea no doubt is that the St. Lawrenc with a general south-west bearing, has its mouth altogether to far North of the proper course to form an advantageous route t China or the East Indies, much less to Australia or New Ze land; yet Quebec is 5 degrees south of London, England, and degrees south of Victoria, in British Columbia, and the Canadia Pacific follows the 46th parallel of latitude very nearly for thousand miles west from Quebec, and then, rising to the 50t degree to go north of Lake Superior, runs south of that in it course west to the Pacific. The general idea is that Canada i too far north for the air line distance to Japan or the East, an that New York and San Francisco are more nearly in the direc route; yet Yokohama is 250 geographical miles nearer to Va couver than to San Francisco. From Vancouver to Montrea in an air line, the distance is 236 miles less than it is between Sa Francisco and New York; whilst the distance from Liverpool i 200 miles less to Montreal than it is to New York. It is nearl 700 miles in an air line nearer from Yokohama to Liverpoc by way of Montreal than it is by New York. Taking th shortest railway route across the continent from New York t San Francisco, as actually constructed, there is an advantage c nearly 1,000 miles by the Canadian route. This is a matter o so much importance that it is worth a little more consideration

The great circle air-line distance from Yokohama to Sa Francisco, by the latest maps published, is 4,470 geographica miles, and to Vancouver, the Pacific terminus of the Canadia railway, 4,232 miles. At 15 knots per hour, to steam thes distances would require 298 hours and 282 respectively, or 1 days and 10 hours against 11 days and 18 hours.

From San Francisco to New York by the shortest railwa route through Omaha and Chicago the distance is 3,271 statut miles, against 2,906 miles by the Canadian route to Montreal, o 3,053 miles to Quebec. At 35 miles an hour it would require 93 hours by the American line, and 87 by the Canadian line, suppos ing the circumstances to be the same in the two cases. But there is a long ferry from San Francisco of 5 miles, and there are heavie grades and greater altitudes, up which the trains have to be

lifted, and delays at important stations, make it impossible to work the American through line as expeditiously as the Canadian. Taking the actual running time made by the fastest service between New York and San Francisco, there is a difference of 50 hours between the two railways, or 137 hours against 87. In winter the difference will be even greater, long lengths of the American line, aggregating one-half of the distance between Omaha and the Pacific, being at an elevation of 5,000 feet above the sea, 500 miles being over 6,000 feet, and 400 miles over 7,000; whilst the Canadian route has a summit nearly 3,000 feet lower than its rival, crossed in a very few miles. Quebec, again, is 2,661 geographical miles from Liverpool; New York is 3,130,—a difference of 469 miles, which at 15 knots requires 31 hours. There is thus a total saving of 16 hours on the Pacific Ocean, 50 hours on the inter-oceanic railway, and 31 hours on the Atlantic, or a total of four days and one hour. Putting the figures of time and distance together we have as follow:—

IN DISTANCE.	PACIFIC OCEAN.	RAILWAY.	ATLANTIC.	TOTAL.
By San Francisco and New York...	4,470	3,271	3,130	10,871
By Vancouver and Quebec..... ..	4,232	3,053	2,661	9,946
Saving in miles....	238	218	469	925

IN TIME.	PACIFIC OCEAN. DAYS.	RAILWAY. DAYS.	ATLANTIC. DAYS.	TOTAL. DAYS.
By San Francisco and New York...	12.10	5.17	8.16	26.19
By Vancouver and Quebec.....	11.18	3.15	7.09	22.18
Saving in time.....	.16	2. 2	1.07	4. 1

This is taking our summer route by Quebec and the Straits of Belle Isle. In the spring, vessels usually go south of Newfoundland which is 158 miles longer, or ten and a half hours; whilst in



winter the route of the future may possibly be by Louisburg, which, when the short line from Montreal is complete, would make the winter route 600 miles longer by railway and 310 miles less by water than the shortest route by Quebec, or, as compared with New York, 250 miles more of railway and 750 miles less on the Atlantic, a change that in winter would certainly not be disliked by the majority of travellers. If the same speed be assumed of 15 knots an hour, the Louisburg route would save 52 hours as compared with New York for the Atlantic trip alone, and still more if, as it usually happens, the speed be reduced during the rough weather in winter. On a recent trip of the "Etruria" the vessel maintained an average speed of 18½ knots an hour for the whole distance there and back, whilst 17 knots is an ordinary speed for any of the new fast steamers. At this latter rate the distance from Liverpool to Louisburg may be made regularly in five and a half days, and the railway trip of 3,620 miles would be done in four days, or together, nine and a half days from Liverpool to the Pacific, which is less time than steamers now take in reaching Suez. To Yokohama, in Japan, at the same speed as calculated for the Atlantic, (and now generally attained) it would occupy ten and a half days, or twenty days altogether from Liverpool to Yokohama, instead of the 55 days at present taken by vessels passing through the Suez Canal, whilst the distance is 1,500 miles less; or 56 days, by Panama, a route 2,700 miles longer than the Canadian line.

The Panama route will never be a very serious competitor with the Canadian Pacific. The distance from Southampton to Colon or Aspinwall, 4,820 miles, is too long for fast steamers to run without re-coaling, and the time required, even at 16 knots an hour, (which it is difficult to maintain on so long a run) would be twelve and a half days. The canal, when finished, with the delays of entering and waiting for the vessel's turn, will occupy another 24 hours, so that even the fastest vessels would be thirteen and a half days before getting fairly under way on the Pacific, which is three days longer than by the Canadian route. To Australia the present mail service is either by the Suez Canal, Colombo and Mc' ourne; by Panama, Auckland and Sydney; or by San Francisco and Honolulu. By the Suez Canal, steamers take thirteen days to Port Said and at least two to Suez. The mails go either by Marseilles, overland, or to Brindisi. By the latter,

the quickest route. it is 1,391 miles from London to the Italian port and occupies 56 hours: thence to Alexandria is 75 hours. and by rail to Suez 200 miles. occupies ten hours. To Aden. 1,308 miles, through the scorching heat of the Red Sea. is nominally 119 hours, and to Colombo. 2,093 miles. occupies 180 hours. or say, with delay at Aden. thirteen days from Suez to Colombo which is another coaling station. and delay. From Colombo to King George's Sound, 3,390 miles. occupies fourteen days. and forward to Melbourne, 485 miles. takes two days more. In 1882 the average time from London to Melbourne was 950 hours. (39 days, 14 hours) the return trip occupying 973 hours, (40 days. 13 hours) except during the Monsoons. when it was 42 days. 13 hours. To Sydney, the shortest time in both directions. was 42 days. By Panama. the time is given at 44 days out and 46 days home. *Via* San Francisco. the distances and time taken are as follow:—

	MILES.	TIME.
Liverpool to New York	3,130	9 days.
New York to San Francisco	3,271	7 "
San Francisco to Honolulu	2,092	8 "
Honolulu to Auckland	3,833	14 "
Auckland to Sydney	1,276	4 "
Totals	13,602	42

From Vancouver, as compared with San Francisco, the distance and time on the Pacific would be about the same, but there is a gain of three days to Vancouver, and by putting on faster steamers on the Pacific, the distance, which in a direct line is about 6,800 miles to Sydney, should be done, including coaling, in 18 days, or say 29 days altogether from London to Sydney.

The Panama route to Australia, as compared with the Canadian line is about 1,100 miles longer on the Pacific, and 2,150 more on the Atlantic, but the time at the same speed for the steamers, 15 knots, would be 35 days, to which 2 added for passing through the canal and coaling, would be 37, as against 29 by Canada, the total distance being about 12,500 by Panama against 12,300 by Canada, the saving being by railway instead of steamer speed. There is, however, one important consideration in connection with the ocean route between Great Britain and the East, or even Australia, that gives the Northern route such

an advantage that the Canadian Pacific ought to distance all its rivals. From England to Colombo, Panama, Calcutta, or even Hong-Kong, no coal is found available for the steamers until the English coal comes within economical distance of the Australian fuel, and, whether the steamer carries it herself, or it is carried for her by chartered vessels, every pound of the fuel she uses has to be transported 1,150 miles to Gibraltar, 2,130 miles to Malta, 2,950 miles to Alexandria, 4,510 miles to Aden, or 6,650 miles to Colombo, at a rapidly increasing cost for her consumption as she proceeds on her way from England. By the Canadian route, 2,350 miles from Liverpool the steamer reaches Louisburg, the port of shipment of one of the largest coal deposits in the world, where her fuel will cost probably two shillings per ton less than in England. At Vancouver she starts again from a point which actually overlays a coal-bed of equal area and value, and where again her fuel will cost as little and require actually less handling than in the Mersey. At Sydney, Australia, she reaches a third coal field that challenges comparison for excellence or economy with either of the others. In times of peace this is a wonderful provision, which seems to mark the Canadian route as the future line of the world's commerce. In time of war, it means much more than this; and the time may come when the difficulty and expense of maintaining the different coaling stations in the Mediterranean, Red Sea and Indian Ocean may suggest the advisability of keeping the main stream of our commerce on lines where expensive, outside coaling stations are unnecessary, and where our men-of-war on the Atlantic, the North or South Pacific, may find just as secure a harbour as can be found in any foreign land, with a colliery at the back of it, on British soil. The coal bill is still the heavy expense in ocean steaming; the time has not yet arrived when great speed is not almost synonymous with heavy consumption of coal, and one of the main reasons why the steamers on the Eastern Ocean are so slowly worked, as compared with the Atlantic, is that, on long voyages, economy of coal must be a prominent consideration, and that speeds obtained nearer home would be ruinous where coal costs from 40 to 60 shillings per ton, and where two or three knots per hour, extra, doubles the consumption.

The general statistics of the railways of Canada are as given below:

At the end of 1876 the mileage, was 5157 miles and the increases each year to June 30th 1885 have been

Year.	Yearly Increase.	Total.
1877	417 miles	5574
1878	569	6143
1879	341	6484
1880	407	6891
1881	369	7260
1882	270	7530
1883	1196	8726
1884	849	9575
1885	1198	10773

The amount of capital stock, bonds, municipal and government bonuses invested in the different railways were :—

Year.	Amount Yearly.	Total.
	$	$
1876	.....	323,232,311
1877	12,064,069	335,296,380
1878	14,067,070	349,963,450
1879	1,468,951	351,432,402
1880	19,618,790	371,051,192
1881	18,234,507	389,285,700
1882	26,326,109	415,611,810
1883	85,123,825	500,753,635
1884	56,879,434	557,615,069
1885	68,139,635	625,754,704

The nominal capital here given up to June 1885 is divided as follows :—

Ordinary Share Capital paid up	216,425,492
Preference Stock do	95,756,670
Bonded Debt do	141,370,963
Aid from Government	140,062,024
Aid from Municipalities	12,472,450
Other sources	19,667,102
	$625,754,704

The train mileage run during the year was 30,623,689 miles. The number of passengers carried was 9,672,599, and of tons of

freight 14,659,271. There are about 1,100,000 tons of steel ar 250,000 tons of iron rails in service.

The earnings of the railways for the fiscal year 1884-5 we $32,227,469 and the expenses $24,015,321. Compared with t fiscal year 1883-4, the train mileage of 1884-5 was about a m lion miles more, the passengers nearly 300,000 less, the to of freight over 370,000 more; while the earnings were son what over $1,000,000 less than in 1884-5, the operating e penses were about $1,500,000 less.

The amount contributed by the people of Canada in aid railway development is large. While yet a people in the grist to use Edmund Burke's expression, the Government gave fifte millions of dollars in aid of the Grand Trunk. Since 1881, t Federal Government have given $74,500,000 to the Canadi Pacific. Other roads have been subsidized with considera sums of money and acres of land. The Provincial Governme have also aided railways to the amount of $19,137,720. T municipalities have paid $12,472,450 to secure railway commu cation. In all, up to June 30th, 1885, the Government a Municipal aid actually paid amounted to $171,672,200, wh further liabilities amounting to nearly $20,000,000 remained that date unpaid, fifteen millions being the Federal Governme share. The greater portion of this latter amount has since be paid. So that up to date it may be said that $187,000,000 ha been contributed by the Governments (Federal and Provinci and by the Municipalities towards the construction of the 13,0 miles of railway within the Dominion. This is equal to average of $16,500 a mile.

The prospects of railway extension and development in Cana are at the present time very hopeful.

The Ontario system of railways has been recently connect at Lake Nipissing with the Canadian Pacific Railway, and fr other points on the St. Lawrence River between Lake Onta and the Ottawa River, railways are in progress to tap the sa main line, and to connect it with railways centering in N York.

There are also railway projects to connect James Bay, t Lake Temiscamingue, the Gatineau Valley and the Lake St. Jo regions with the Canadian Pacific, thus utilizing large tracts fertile country, whose distance from existing centres of popu

tion has rendered them useless for settlement, though their value has been generally recognized.

In the Island of Cape Breton there is also activity in railway enterprise, the purpose being to connect Louisburg, once the great French Arsenal at the entrance of the Gulf of St. Lawrence, with the Straits of Canso, thence across the country by direct line to Montreal.

In the Province of New Brunswick there is also great activity both in lines under construction, and lines projected all connecting either with the existing Intercolonial main line or with the proposed "short line" to Montreal. When all are finished, that province will be as fully equipped as any part of the American Continent.

In Manitoba and the North West Territories branch feeders of the Canadian Pacific Railway have been begun, North and South, and considerable mileage has been already constructed. The purpose of the promoters of these lines is to connect the North Saskatchewan Valley with the Canadian Pacific to the North, and the rich coal fields at Lethbridge, to the South. Another railway to which public attention has been directed is the Winnipeg and Hudson Bay railway designed to connect Lake Winnipeg with Hudson Bay, near Fort Churchill.

During the present session of Parliament charters have been sought for railways, opening up two of the many important valleys of British Columbia—the Kootenay Lake and the Okanagan Lake regions in connection with the main line of the Canadian Pacific Railway. Communication is also proposed by means of the extension of the Algoma branch of the Canadian Pacific to that part of the State of Michigan lying directly south of Lake Superior, and Minnesota and other Western States.

During this session of Parliament twenty-two charters of incorporation have been applied for by Railway Companies.

The latest returns supplied the Government are down to June 30th 1885. Still later private returns are down to 31st Dec. last. By these the total Railway mileage is show to be 11,275 miles—an increase since the official returns were last presented of 868 miles of which the Canadian Pacific has contributed 428 miles, the Northern 110 and the three lines previously mentioned in the North West 154, the remainder being distributed amongst all the provinces.

WATER WAYS.

The Dominion is well supplied with natural means of int communication.

The water-ways which pierce the country in every dir tion have already been mentioned. In addition to the the Government has undertaken the construction of a system canals intended to overcome natural barriers to free communic tion. Much time and money have been expended also upon th improvement of rivers, the most noticeable effort in this directio being the improvement of the St. Lawrence, a short account which will show the energy and enterprise of the people Montreal.

IMPROVEMENT OF THE RIVER ST. LAWRENCE BETWEEN MONTREAL AND QUEBEC.

The River St. Lawrence from the Gulf of St. Lawrence to th immediate vicinity of the city of Quebec is from 10 to 35 miles in width, of great depth, and possesses every natural advantage for navigation by vessels of any size.

From Quebec to Montreal, a distance of 159 English miles, the river is generally from one to two miles in width, with a depth of forty-five to one hundred feet for a distance of 45 miles above Quebec, ; above that, except in shoal places, it is of a depth of 30 to 50 feet.

At above two-thirds of the distance above Quebec, the river widens out into the Lake St. Peter, which is 20 miles in length by 9 miles in width and with a general depth of only 11 to 18 feet at lowest water.

The tide, which rises 14 feet at Quebec, is gradually lost in ascending, until it becomes imperceptible at the lower end of Lake St. Peter. The average current of the river between Montreal and Quebec may be taken at 2 miles per hour and is nowhere sufficient to affect navigation.

From Montreal to Lake Ontario, a distance of 183 English miles, the lower 100 miles is broken by rapids, which are overcome by a system of canals with locks enabling the vessels of the great lakes to descend and exchange cargoes with the sea-going vessels below.

At several places between Quebec, city and Montreal there were shoal places preventing large vessels from reaching the latter city. In the aggregate, these shoals were 39.25 miles, divided

among twenty different places, the widest being in Lake St. Peter (17.47 miles). They were composed of gravel, sand, clay, boulders and shale rock.

Work was begun in Lake St. Peter in 1844, the purpose being to dredge out a straight channel. This purpose was subsequently abandoned and the work suspended in 1847, after an expenditure of $287,629. In 1851 dredging was begun in the present ship-channel, which follows the deflections of the natural channel and takes advantage of the pools of deep water existing.

By 1869 the increase of depth effected was 9 feet, giving a 20 foot channel to Montreal. The completion of this channel marked an important era in the history of the St. Lawrence route. The success of the work amply demonstrated that the St. Lawrence could be made available up to Montreal for navigation by the largest class of ocean merchant-ships, and the extraordinary increase of Canadian commerce that attended the improvement of the channel showed how imperatively it was demanded by the trade of Canada. The increase in trade and in the size of ocean steamships necessitated a further deepening of the channel. By 1878 the depth was 22 feet; by 1882 it was 25 feet, and by the end of last season (1885) it was 27½ feet; the total cost, including the expenditure on the abandoned "straight channel," up to 31st December, 1885, has been $3,503,870 (£720,960) and the total quantity of dredged matter, 15,230,736 cubic yards.

In the straight part of the channel, the dredging is from 300 to 325 feet wide, but in other parts it is widened to 450 feet or more.

This work has made Montreal remarkable from the fact that it is a fresh water sea-port frequented by the largest craft, nearly 1,000 miles inland from the Atlantic, 250 miles above salt water, and nearly 100 miles above tide. In the bottom of a lake whose water was from 11 to 18 feet deep upon the flats, a submerged canal has been excavated, entirely by steam, 17 miles long and with sides, in the worst places, over 16 feet high.

The Canal Systems of Canada.

The canal systems of Canada under Government control in connection with lakes and rivers are as follows:—

1st. The River St. Lawrence and lakes.

2nd. The River Ottawa.



3rd. The Rideau navigation from Ottawa to Kingston.

4th. The Trent navigation.

5th. The River Richelieu from the St. Lawrence to Lake Champlain.

6th. St. Peter's canal, Bras d'or Lake, Nova Scotia.

The River St. Lawrence, with the system of canals established on its course above Montreal, and the lakes Ontario, Erie, St. Clair, Huron and Superior, with connecting canals, afford a course of water communication extending from the Straits of Belle Isle to Port Arthur at the head of Lake Superior, a distance of 2,260 statute miles.

When this system of canals was designed, it was in contemplation to afford a depth, at all stages, of the St. Lawrence waters of nine feet—a depth, seemingly, from the data then possessed, secured through the works proposed. The River St. Lawrence is, however, from various causes, subject to fluctuations, the extent of which it was impossible, at the time when these canals were originally constructed, to arrive at with precision, and the continued observations and experience of subsequent years have shown that, while the intermediate river-reaches at all times afford ample depth for vessels of nine feet draught, in the canals themselves, at certain periods of low water, this depth cannot be maintained, the bottom not having been sunk to a sufficiently low level.

In the year 1871 it was decided to enlarge the canals on the St. Lawrence route, in order to afford a navigable depth of twelve feet throughout. Subsequently, however, it was decided that the depth should ultimately be increased to accommodate vessels of 14 feet draught; and accordingly, in the scheme of enlargement which has so far been carried out, while at present a channel-way in the canals is provided for vessels drawing twelve feet only, all permanent structures, locks, bridges, etc., are built of such proportions as to accommodate vessels of 14 feet draught, the locks being 270 feet long between the gates, 45 feet in width and with a clear depth of fourteen feet of water on the sills.

Starting from Montreal the first canal reached is the Lachine, which extends from that city to the village of Lachine, overcoming the St. Louis Rapids, the first series of rapids which bar the ascent of the River St. Lawrence. They are 986 miles distant

from the Straits of Belle Isle. This canal is 8½ statute miles in length.

The Beauharnois canal commences on the South side of the St. Lawrence, 15 miles from the head of the Lachine canal. It connects lakes St. Louis and St. Francis and passes the three rapids known as the Cascades, the Cedars and the Coteau. The length of this canal is 11¼ statute miles.

From the head of the Beauharnois to the foot of the Cornwall canal, the next in order, there is a navigable stretch through Lake St. Francis of nearly 33 miles, at the end of which are the Long Sault Rapids, past which extends the Cornwall canal, 11½ miles in length. Five miles from the head of the Cornwall, Farran's Point Rapid is overcome by a canal ¾ of a mile in length. Ten miles beyond, the Rapide Plat canal, 4 miles long, enables vessels to avoid the Plat Rapids. Five miles more, and the ascending vessel reaches the Galop's Canal, 7⅝ miles long.

Between Lakes Ontario and Erie, the great barrier of the Niagara Falls and rapids is encountered. To overcome this, the Welland Canal was devised. It is 26¾ miles long and has 27 locks rising to an upper level of 300 feet. It was commenced in 1824, opened partially in 1829, and wholly in 1832. Its enlargement was begun in 1841, owing to the fact that the size of vessels had so increased that more than one-half the vessels navigating the lakes were unable to pass through the canal. The first enlargement was no sooner completed than it was found necessary to increase the depth of water, as the vessels continued to increase in size. In 1859, the St. Lawrence route not maintaining its share of the Western trade and of the grain trade in particular, inquiries were instituted into the causes of diversion to rival routes. In the report, it is stated that of the number of vessels engaged in the grain trade of the lakes, one-fourth to one-third could pass through the Welland Canal, while nearly three-fourths of the propellers on the upper lakes, the class of vessels chiefly used in the grain trade, were too large to pass down to Lake Ontario, "and if it should be shown that the predominating cause of the diversion of trade is due to the fact that the size of the locks is not adapted to the class of vessels in use on the upper lakes, the enlargement of the Welland Canal would seem to be as much a matter of necessity as was its original construction." The second enlargement was begun in 1872, and though

but partially finished, it has resulted in admitting to the carrying trade between the upper lakes and Lake Ontario a number of sailing vessels and propellers, too large to navigate the old canal and too small to compete with the larger carriers. During the present month, February, contracts have been let for the completion of the enlargement. The importance of the work to the empire is evident. Great Britain draws her food supplies from this continent through five great ports, Baltimore, New York, Philadelphia, Boston and Portland on the Atlantic sea-board, the latter port, however, relying chiefly upon Canadian grain. The object of the Welland Canal is to create a sixth port, in Montreal, from which grain can be shipped to Liverpool, thus giving the United Kingdom the advantage of a competitive route through British Territory.

The Erie Canal having been declared a free canal, the competition between it and the Welland has become keen, and an agitation has sprung up in favor of the abolition of tolls on the Canadian system. The well-known desire of Canadians to mark, in every suitable way, their appreciation of the benefits resulting from the connection of Canada with the United Kingdom, will doubtless carry the agitation to a successful issue.

The Welland canal has been, and remains, one of the great public works of Canada, though of diminished importance at present, owing to the development of railways.

The Ottawa and Rideau system of canals has for its object the connection of Montreal, by the waters of the Ottawa, with Kingston on Lake Ontario.

The following table shows the intermediate distances from Montreal Harbour.

Sections of Navigation.	Intermediate Distances.
The Lachine Canal	8 and a half miles
From Lachine to St. Anne's Lock	15 " " "
From St. Anne's Lock to Carillon canal	27 " " "
The Carillon canal	¾ "
From Carillon canal to Chute à Blondeau	4¾ "
Chute à Blondeau canal	⅛ "
From Chute à Blondeau to Grenville canal	1⅜ "
Grenville canal	5¾ "
From the Grenville canal to entrance of Rideau navigation	56 "
Rideau Navigation ending at Kingston	126¼ "
Total distance from Montreal to Kingston	245⅝ "

These canals were constructed primarily with a view to the defence of the Province. They were long held by the Imperia Government and were transferred to the Canadian authorities in 1856. The necessity of the Rideau canal for defensive purposes was suggested during the war of 1812 when the difficulty of communication by the way of the St. Lawrence River, in the face of an enemy, was often great. The cost of construction has been $4,132,166. The highest point is the Rideau lake, which is 292 feet above the level of the Ottawa at the outlet of the canal.

4. The Trent river navigation is a term applied to a series of water stretches, efficient at present only for local purposes. The series is composed of a chain of lakes and river extending from the Bay of Quinté, Lake Ontario, to Lake Huron via Lake Simcoe. The execution of this scheme, commenced in 1837, was subsequently deferred. Recently Parliament has voted appropriations for further development.

5. The river Richelieu and Champlain system, commences at Sorel at the confluence of the rivers St. Lawrence and Richelieu, 46 miles below Montreal, and extends along the latter river to the basin of Chambly; thence by the Chambly canal to St. John's; thence to Lake Champlain, at the southern end of which connection is made by the Champlain canal with the Hudson river, by which the city of New York is reached. The Chambly canal is 12 miles long.

It will thus be seen that by the canal system of Canada, as originally sketched, it was proposed—1st, to form an interior route of transport from Montreal to Lake Ontario, adapted for the conveyance of troops and munitions of war; 2nd to overcome the obstacles of the St. Lawrence and to give close communication between the vast grain-growing regions of the great lakes and Montreal; 3rd, to bring Montreal and New York into communication with each other by means of water transport. The total cost up to the 30th of June, 1885, of the whole canal system of Canada was $28,544,000. The total actual length of canal is 73 miles.

Navigation Returns.

The sea-going vessels entered and cleared at Canadian ports in 1885 numbered 21,192, of an aggregate burden of 7,644,615 tons and carried 294,470 men. In the inland waters lying between



Canada and the United States, there entered and cleared 29,95[illegible] vessels of 6,440,097 tons, carrying 268,586 men; in the coasting there entered and cleared, 82,148 vessels of 15,944,422 tons burden carrying 779,360 men. Of these vessels, 56,645, with a tonnage of 21,685,856 tons, were steamers. Thus, 42 per cent of the total number of vessels and 72 per cent of the total tonnage were steamers.

Of the sea-going craft which in 1885, entered inwards 1706 with a tonnage of 1,544,306 tons, were British; 5190, with a tonnage of 759,105 tons, were Canadian, and 3743, with a tonnage of 1,497,253 were foreign. Of these, 959 British vessels with a tonnage of 1,248,367 tons, carried cargoes: the Canadian vessels carrying cargoes numbering 3164, with a tonnage of 439,307, and the foreign, 1,913 with a tonnage of 815,536.

These vessels brought cargoes to Canadian ports from over forty countries, chiefly however from the United States, British West Indies, Newfoundland and Brazil; vessels arrived from France, Spain, Portugal, Belgium, Holland, Germany, China Denmark, Egypt, Japan, Italy and other countries.

The sea-borne products of Canada were distributed by 149[illegible] British vessels with a tonnage of 1,440,551 tons; by [illegible]095 Canadian vessels with tonnage of 801,445, and by 2[illegible]4 foreign vessels with a tonnage of 1,226,858. Besides these, there cleared outward, *in ballast*, 20 British vessels of 1[illegible],457 tons burden; 22[illegible] Canadian of 28,344 tons, and 1,184 foreign of 324,296 tons. These products were widely distributed, business having been done with about forty countries, chiefly, the United Kingdom United States, Newfoundland, France and French possessions, the West Indies, Spain, Portugal, Belgium, Holland, Germany, Italy and other European countries, Australia, different South American and Central American countries, China, Japan, etc.

Out of a total of 2,226,471 tons weight of cargo and 2,223,71[illegible] tons measurement of freight brought to and carried from Canada by sea-going vessels, British vessels carried 1,105,157 tons weight and 509,343 tons measurement; Canadian vessels, 591,526 tons weight and 860,450 tons measurement; and foreign vessels, 530,788 tons weight and 853,901 tons measurement.

Thus about 70 per cent of the whole sea-borne traffic of Canada is done under the British flag.

Besides this traffic directly done between Canadian ports and the rest of the world, there is a considerable business done with other countries through the United States; Canada, availing herself of the opportunities afforded by the ports of New York and Boston, and shipping exports, or receivings imports through these channels. In 1885, the value of goods exported to other countries in bond through the United States was $4,849,885.

The imports are not given in the Canadian returns, but from the American, it appears that there are about $25,000,000 worth of goods imported into Canada in bond through the United States. The proportion of this trade carried by vessels bearing the British flag is about the same as in the case of the direct carrying trade.

XIII.

AUXILIARIES TO THE TRANSPORT SYSTEM.

The auxiliaries to a properly developed transport service in a country like Canada are telegraph and telephone lines; postal and money order accommodations. In addition to these there is need of a well lighted coast to protect the merchant marine frequenting its waters.

Telegraph System.

Canada is well supplied with the telegraph system, partly by incorporated companies and partly by the Government of the Dominion.

The Government lines are:—1st. Those of the Gulf of St. Lawrence and Bay of Fundy; 2nd. Those of the North-West Territories, and 3rd. Those in British Columbia.

The first named connect the Magdalen Islands, the Island of Anticosti and other fishing regions with the Mainland, and give fishermen early information of the condition of the fisheries in the various localities. A line of telegraph has also been extended along the north shore of the St. Lawrence, to supply speedy communication in case of shipwrecks. The chief quarantine station in the St. Lawrence is also connected with the mainland by cable, thus enabling the authorities at Ottawa to have instant knowledge of the arrival of vessels with disease on board.

In the North-West Territories, the Government has constructed a system of telegraph lines, embracing Prince Albert, Battleford, and Edmonton on the north; and Dunmore, Fort McLeod and Turtle mountains at the south, thus forming a complete circuit, including within its ample reach, the Indian tribes on the reserves and bringing the several corps of Mounted Police into close communication with headquarters at Ottawa and with each other.

In British Columbia a deep sea cable has been laid between Vancouver Island and the United States territory, by which connection is made with the whole United States system.

The railway companies have telegraph lines for the efficient working of trains.

The Canadian Pacific telegraph line will shortly extend from ocean to ocean, with subsidiary lines running through Ontario.

The telegraph companies have their lines over the Dominion, connecting every city and village.

The statistics of telegraphs are, in round numbers, as follow:

	1885.	1868.
Stations	2,409	.....
Miles of poles	20,347	7,000
Miles of wire	47,306	8,507
Messages Gov't. lines..... 105,000		
" company lines... 5,138,500	5,243,500	690,000

The position of Canada on this continent makes it the landing ground for the majority of the cable lines which connect North America with Europe, thus ensuring it direct cable communication with Great Britain.

The Imperial Government, it is understood, have under consideration to connect, by cable, Bermuda and the West Indies with Halifax, the chief Imperial naval station on this continent.

A company has been chartered by the Canadian Parliament for the purpose of laying a cable between the Pacific coast of Canada and Hong Kong and other points on the Chinese and Japanese coasts.

The use of the telephone has become very general in Canada. It has been introduced into about 200 cities and towns, 175 of which are connected as by telegraph. There are about ten thousand sets of instruments in use at the different exchanges and agencies in Canada.

Post Office System.

The post office facilities in Canada are fully equal to those of any country. Notwithstanding the great distances to be traversed, letters are carried from the Atlantic to the Pacific for three cents (1½d) per half ounce prepaid. Newspapers sent from the offices of publication are carried free. There is a parcel, sample and book post. The money order system is cheap and complete, not only between different parts of Canada, but between Canada and the United States, and Great Britain and other European countries.

The statistics of the Post office Department show marked development since Confederation. The following comparative statement will indicate the growth of the postal facilities during the past ten years :—

——	1885.	1875.	Per cent. increase.
No. of Post offices in operation.....	7,084	4,892	45
Whole length public mail route, miles.....	50,461	38,430	31
Length of railway route, miles.....	9,858	4,491	120
Aggregate annual mail travel, miles..	22,173,455	14,384,678	54
Increase of mail travel 1885 over 1884	$1,287,139	.....	.....
Aggregate cost of mail service.....	$3,097,882	$1,873,241	65
Aggregate post stamps, envelopes and cards sold.....	$2,325,490	$1,178,751	97
Number registered letters carried....	3,060,000	1,750,000	75
Number of parcels of samples, patterns carried.....	10,500,000	.....	.....
Number of money orders issued (domestic)	352,904	.....	.....
Amount of money orders issued (domestic)	$8,254,003	$6,135,996	34
Average amount each money order..	$ 23.40	.....	.....
Number money orders issued, foreign	146,339	.....	.....
Amount money orders issued, foreign	$2,310,208	585,443	263
Average amount each money order..	$ 14.60	.....	.....
Number of money order offices.....	885	687	28
Fees received from issuing money orders	73,593	$ 54,360	35
Whole number of letters, post cards, &c., carried.....	82,200,000	42,000,000	96
Whole number of parcels by parcel post.....	600,000	131,352	356
Aggregate revenue for the year.....	$2,400,000	1,536,509	56
Dead letters, circulars and post cards	694,556	572,128	21
Registered dead letters.....	16,340	3,276	.....

The Light House System of Canada.

The light house system of Canada is free for all nations without payment of dues of any kind. It is extensive, rapidly expanding, and maintained in a high state of efficiency.

In 1867 there were 198 light stations and two fog whistles in the Dominion, as then constituted. At the close of 1885 there were 526 light stations, 23 fog whistles, and 12 automatic fog horns. The whole number of persons engaged in the outside service was 1,414, and the total amount expended during the last fiscal year was $1,038,893; the total cost of maintenance of lights and of four steamers in attendance was $541,297.

In a paper read before the British Association in 1885 by the Deputy Minister of Marine, William Smith, Esq., it is stated that the extent of the sea coast in the Dominion to be lighted up and provided with fog whistles, bell buoys, automatic buoys, ordinary buoys and beacons is 3,200 miles; inland coast, 2,600 miles, making in all about 5,800 miles of coast to be lighted and buoyed. To effect this object there are 308 sea coast light stations, 224 inland light stations with fixed lights, and 17 light ships. The number of light stations with fixed lights is 467; with revolving lights, 82.

There are 483 lights in the Dominion, the apparatus of which is on the catoptric principle; and 66 dioptric lights, two of which are of the first order, twelve of the second and six of the third.

Of course many thousand miles of Canada's coast line, included in the Hudson's Bay line and along the indented littoral of British Columbia, have not been lighted, the requirements of navigators not yet embracing these regions.

In addition to lighting the coast of Canada, the Canadian Government maintain lights on the Island of Newfoundland, some lighting the Straits of Belle Isle, and others the entrance of the Gulf between Cape Breton and Newfoundland. The light on Cape Race is also maintained by Canada. Two powerful lights and a steam fog whistle have been established by Canada on an island belonging to the United States on the coast of Maine; and in Lake Superior, Canada has a fine light and steam fog whistle on another island owned by the United States.

Canada has a large humane establishment on Sable Island in

the Atlantic Ocean, with lights, life-saving stations, life-boats, surf-boats, rocket apparatus, and a staff of twenty skilled men in daily practice. Telephone communication will soon be established between the five stations on the island, and it is proposed to have cable communication with the mainland, 65 miles distant.

XIV.

THE SAVINGS' BANKS OF CANADA.

These include the Post Office Savings' Banks, those called Government Savings' Banks, and several specially chartered institutions. In addition, the chartered banks have savings' branches. The following table will indicate the progress the country has made in accumulating wealth:—

Banks.	Savings.		
	1868.	1878.	1885.
Government institutions	$ 2,167,025	$ 8,498,146	$ 34,836,783
Chartered Savings' Banks	2,461,080	5,835,433	9,064,959
Savings' branches of cht'd banks.	18,703,664	31,552,038	49,845,515
Friendly and Loan Society	959,051	8,269,295	13,876,576
Total	$24,290,820	$54,154,912	$107,623,833

From returns to Parliament, it appears that on the 30th of June, 1884, there were 27,856 male and 15,253 female depositors in the Government, and 40,475 male and 26,207 female depositors in the Post Office, savings' banks. In all, there were 111,790 deposits in the two branches under the control of the Government of Canada. There are no later returns, but the increase in the amount of deposits, during the eighteen months which have intervened, indicates that the number of depositors at present is not short of 120,000.

As to the classes of depositors, a return of the same date as those above-mentioned shows the following results in the case of the Post Office savings' banks:—

CLASSES OF DEPOSITORS.

Occupation.	No. of Depositors.	To Credit of Each Class.	Average Each Class
Farmers	14,000	$4,722,000	$337
Mechanics	7,850	1,422,000	181
Trust accounts and young children	5,500	170,000	31
Labourers and sailors	4,270	724,000	169
Clerks	3,000	522,000	174
Tradesmen	1,600	468,000	298
Farm and other male servants	1,470	277,000	188
Professional	1,572	392,000	249
Miscellaneous	1,680	215,000	128
Married women	12,000	2,350,000	196
Single	10,500	1,275,000	120
Widows	3,240	708,000	214

By Provinces, the statement is as follows:—

POST OFFICE SAVINGS' BANKS.

	ONTARIO.		QUEBEC.	
	Males.	Females.	Males.	Females
Having sums not exceeding $100	17,415	12,614	2,873	1,510
" " between $100 and $350	8,838	6,171	1,636	890
" " " $300 and $500	3,590	2,110	725	1,060
" " " $500 and $1,000	3,005	1,549	654	944
" " exceeding $1,000	1,321	539	418	610
Total	34,169	22,983	6,306	3,224

Depositors holding $1,000 and upwards aggregated	$ 2,789,227
" " $500 to $1,000	3,819,062
" " less than $500	6,571,700
Making a total of Post Office savings deposits	$13,179,989

The return for March, 1886, shows that the total amount on deposit in the Post Office branch on the 31st of that month was $16,954,243.

In the other Provinces, the savings' banks under the control of the Government are called "Government Savings' Banks"—there being no Post Office branches in these Provinces.

The returns up to the 30th of June, 1884, are as follow:—

	$100 and under.		$100 to $300.		$300 to $500		$500 to $1,000.		Over $1,000.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Nova Scotia	4,788	3,562	2,875	1,741	1,166	606	1,163	475	1,292	447
New Brunswick	3,185	2,510	1,911	1,516	810	527	827	449	750	308
Prince Edward Island	976	707	675	392	285	107	284	95	298	72
British Columbia	1,417	396	628	148	340	63	429	67	650	102
Manitoba	789	231	551	135	233	37	191	27	115	26
Ontario (Toronto)	583	240	269	112	127	53	141	43	160	58

The totals are as follows:—

Nova Scotia	11,284 males	with deposits—	$ 4,635,881
" "	6,831 females,	" "	1,857,391
New Brunswick	7,433 males,	" "	2,877,947
" "	5,310 females,	" "	1,428,755
Prince Edward Island	2,516 males,	" "	1,078,336
" " "	1,373 females,	" "	334,359
British Columbia	3,464 males,	" "	2,033,950
" "	776 females,	" "	313,515
Manitoba	1,879 males,	" "	537,447
"	456 females,	" "	116,065
Ontario (Toronto)	1,280 males,	" "	560,161
" "	506 females,	" "	198,170
Totals	43,108		$15,971,984

The latest returns of these banks published by the Government is for the month of March, 1886. The deposits then were $19,154,508 making for the two branches under Government control a total of $36,108,841.

The Province of Quebec does not appear to advantage in the foregoing tables. The people of that Province, however, are thrifty and saving. They have several savings banks not directly under Government control, and seem to prefer these to the Post Office or Finance Departments.

The two chartered savings' banks of Quebec Province show, as already stated, deposits of over $9,000,000. In this Province, attention has been directed to educational savings' banks, designed to teach school children thrift.

Taking the total of all the savings of the people of Canada, deposited in the various savings' banks, the result is an average of the population per head of $21.60 (£4 8s 0d).

XV.

THE CITIES OF CANADA.

The cities and towns of Canada, having over 5,000 inhabitants and their increase during three decennial period given below show the development which urban life has attained in the country.

	1861	1871	1881
Montreal	90,323	107,225	140,747
Toronto	44,821	56,092	86,415
Quebec	59,990	59,699	62,446
Halifax	25,026	29,582	36,100
Hamilton	19,096	26,716	35,961
Ottawa	14,669	21,545	27,412
St. John	27,317	28,805	26,127
London	11,555	15,826	19,746
Portland	.....	12,520	15,226
Kingston	13,743	12,407	14,091
Charlottetown	.....	8,807	11,485
Guelph	5,076	6,878	9,890
St. Catherines	6,284	7,864	9,631
Brantford	6,251	8,107	9,616
Belleville	6,277	7,305	9,516
Trois-Rivières	6,058	7,570	8,670
St. Thomas	.....	2,197	8,367
Stratford	.....	4,313	8,239
Winnipeg	.....	241	7,985
Chatham	4,466	5,873	7,873
Brockville	4,112	5,102	7,609
Levis	5,333	6,691	7,597
Sherbrooke	.....	4,432	7,227
Hull	.....	.....	6,890
Peterborough	.....	4,611	6,812
Windsor	.....	4,253	6,561
St. Henri	.....	.....	6,415
Fredericton	5,652	6,006	6,218
Victoria	.....	3,270	5,925
Sorel	4,778	5,636	5,791
Port Hope	4,162	5,114	5,585
Woodstock	.....	3,982	5,373
St. Hyacinthe	.....	3,746	5,321
Galt	.....	3,827	5,187
Lindsay	.....	4,049	5,080
Moncton	.....	.....	5,032
Yarmouth	.....	.....	6,280
Sydney	.....	.....	5,484
Chatham N.B.	.....	.....	5,762

Montreal is the chief city of Canada. It is built upon a series of terraces, marking the former levels of the river, and is nearly four miles long by two broad. Mount Royal, which rises 700 feet above the river level, forms a magnificent background to the busy city. The estimated value of real estate within Montreal is $90,000,000. It has increased in population since 1881, both by annexation of adjacent municipalities and by natural increase, and contains now a population of about 180,000. Its hotels and public buildings are fine, and Dr. W. H. Russell years ago pronounced its quays "imperial in their proportions."

Fourteen lines of steamships trade regularly to the port.

The statistics of the business of the port are as follow:—

YEARS.	SEA-GOING VESSELS ARRIVED.	TOTAL TONNAGE.	MERCHANDISE EXPORTED.	MERCHANDISE IMPORTED.
1850.....	211	46,156	$ 1,744,772	$ 7,174,780
1880.....	710	628,271	30,224,904	37,103,869
1881.....	569	531,929	26,561,188	43,546,821
1882.....	648	554,692	26,334,312	49,749,461
1883.....	660	664,263	27,277,159	43,718,549
1884.....	626	649,374	27,145,427	42,366,793
1885.....	629	683,854	25,274,898	37,403,250

Montreal is the centre of the great railway systems of Canada. The Grand Trunk and Canadian Pacific railways have their headquarters in this city. The Central Vermont and South-Eastern railways connect these two systems with the railways of the Eastern and Central United States. Besides these, there are several minor roads centering in Montreal. It is the most important manufacturing city in the Dominion, having large and varied industries, which give employment to many thousands of artizans.

TORONTO

is the largest city on the Canadian side of the great lakes. It is the seat of the law courts, and the centre of education for the great Province of Ontario. Entered by six railways, converging from different points of the compass, possessing a fine harbour, situated in the centre of a rich agricultural district, and being at once the religious, educational, political, literary, legal, and



commercial centre of the most populous province of the Federation, it has advanced with great rapidity. Its population in 1885 was 120,000. Its growth is manifest by the returns. The value of assessed property in 1878 was $49,053,765, and for 1886 it is $72,721,559, an increase of 48 per cent. in eight years.

The value of new building erected since 1880 is as follows: 1881, $1,302,200; 1882, $1,757,630; 1883, $1,406,740; 1884, $2,033,245; 1885, $3,449,375.

Quebec.

The city of Quebec is passing through a period in its history, such as all the old garrison towns of Canada have passed through since the withdrawal of British troops. In addition it has had to experience the sharp rivalry of Montreal, made the keener in consequence of the improvement of the channel between the two cities. The effects were seen in the diminished population in 1871, compared with 1861. The construction of railways, the development of manufactures and interprovincial trade during the last twelve or fifteen years, have given the Ancient Capital a fresh start. The extent to which it has suffered through the successful absorption of its trade by Montreal, may be judged from the fact that while, in 1876, the tonnage entered outwards for sea was 711,386 tons, in 1885 it was but 562,064; Montreal in the same years increasing from 310,608 tons to 494,864; an increase of nearly 60 per cent. The Canadian Pacific Railway has recently extended its facilities to Quebec, thus connecting it directly with the great North-West by rail.

Other Cities.

The chief cities in the Maritime Provinces are Halifax and St. John. Both are fine ocean ports. The harbour of Halifax is pronounced the finest among the great harbours of the Empire. It is easy of access for ships of every class, and capacious enough to afford anchorage for the navies of all Europe. It runs inland over fifteen miles, and, after passing the city, suddenly expands into Bedford Basin, a beautiful sheet of water, covering an area of nine square miles, completely land-locked. Halifax is the chief naval station of British North America, and the only city now occupied by Imperial troops. The city and harbour are protected

by eleven different fortifications, armed with powerful batteries of three and six hundred pound Armstrong rifled guns. A large store of munitions of war of all kinds, including torpedoes, is kept there by the Imperial Government. It has of late years made rapid strides in manufacturing. St. John, the commercial capital of the Province of New Brunswick, is admirably situated at the mouth of the River St. John, has a harbour open all the year round, regular steam communication with all parts, and railways running east, west, and north. It has extensive maritime and manufacturing interests, and is the centre of the lumber trade of the country watered by the St. John river. It suffered severely in 1877 from a fire, which reduced the business portion to ashes, but with characteristic energy the people set to work to rebuild their city, and it now forms an active, progressive community. The population of Halifax is now 40,000, and of St. John 28,000.

Hamilton is the fourth most populous city in Canada. It is one of the most rapidly growing and enterprising cities in the Dominion, beautifully situated on the south-western curve of Burlington Bay, at the western extremity of Lake Ontario, and has superior facilities for becoming a large manufacturing city, being accessible from all points by railway and lake navigation, and being situated in the centre of the finest grain-producing region of Ontario.

London, the westernmost city in Ontario, is splendidly situated on the River Thames, in the County of Middlesex. Fifty years ago its present site was a wilderness; now it is a fine city, regularly laid out, having wide streets well built upon with handsome buildings. It has good railway communication with all parts of Canada. The aim of its founders was to reproduce in Canada the names associated with *the* London. Accordingly, it has its Pall Mall, Oxford, Waterloo, and Clarence streets; Westminster and Blackfriars bridges. London (Canada) is surrounded by a rich agricultural country, furnishing it with a large trade in wheat and other produce. Within its borders, are numerous manufactories, mills, machine shops, foundries, breweries, banks, asylums, colleges, etc.

Ottawa, the seat of the Federal Government, is the *entrepot* of the great lumber trade of the Ottawa River and its tributaries, and on the piling grounds around the Chaudiere falls

there is always a stock of lumber estimated at 125,000,000 feet. To keep these filled to their fullest capacity a number of mills cluster around the falls, employing, some of them, over a thousand men; supplied with the finest machinery; lighted with powerful electric lights, by the aid of which, work, during the season, is maintained without ceasing both day and night. The city itself is also lighted by electricity. Its population is 32,000.

The buildings belonging to the Federal Government are the chief attraction of Ottawa; the main one, situated on a high bluff which juts out into the Ottawa river, is the Parliamentary. It contains the Senate Chamber and House of Commons. The dimensions of these halls are the same as those of the House of Lords, viz.: 80 by 45 feet; they are lighted by the electric light. The whole building, which is 500 feet in length, is constructed of a light-coloured sandstone, the walls and arches being relieved with cut stone dressings of sandstone, and with red sandstone. The library, a circular building, constructed after the plan of the library of the British Museum, has a dome 90 feet high, and is in the rear of the central tower, which is 250 feet high.

Separated from the main building, and distant from either end about a hundred yards, are the two departmental buildings, each with a front of 375 feet in length. The buildings together cover about four acres, and cost about $5,000,000. The growth of departmental business, occasioned by the development of the North-West, has rendered necessary the construction of a third departmental building, which is now in course of erection.

Ottawa is well connected with the rest of the Dominion by railways, which run in every direction, north, south, east, and west. As illustrative of the extent of country governed from Ottawa, the distances of some of the cities and towns of Canada from the capital may be given: Battleford (North-West Territories), 2,328 miles; Calgary (North-West Territories), 2,141; Winnipeg (Manitoba), 1,302; Victoria (British Columbia), 2,871; Toronto, 261; London, 377. These are Western cities. Turning eastward, Halifax is 978 miles distant from Ottawa; St. John, 835; Charlottetown (Prince Edward Island), 1,060; Montreal, 120; and Quebec, 279 miles. By the aid of railways and telegraph lines, cities as far apart as Charlottetown and Victoria within hailing distance of the Capital.

Victoria, the capital of British Columbia, is a thriving city with a winter population of about 8,000, or nearly double its population of 1877. The seal-fur, salmon canning, fish, and lumber trades have been greatly developed during recent years, and the harbours of Victoria and Esquimault are thronged with shipping, to an extent unknown a few years ago—an earnest of the business that will be done there in the near future. The scenery is marvellously fine; the climate salubrious, and sport abundant. It boasts of being the most English town in Canada. It has direct steam communication with San Francisco. A submarine cable across the Gulf of Georgia connects it with the main land, and thence with the other Canadian cities. The telephone system and electric light have been introduced, as is the case in most of the cities of Canada.

The following is the official statement of assessed values, including exemptions: 1880, $2,681,250; 1881, $2,690,000; 1882, $2,809,675; 1883, $2,887,755; 1884, $3,092,200; 1885, $5,178,800. The value of new building erected in 1885 is given at $775,000. The revenue of the corporation has increased from $57,000 in 1876 to $120,000 in 1885.

The city of Winnipeg is of recent growth. Its population in 1871 was 241; in 1881, 7,985, and in 1885, 19,574. The total assessed value in 1885 was $22,859,592; the value of new buildings erected in 1885 was $190,000. It has 912 trading institutions of every class. The business of the year 1884 was as follows: Wholesale mercantile, $14,220,098: retail mercantile, $5,809,600; manufacturing, $2,550,000.

The city is lighted by electricity and gas. It has good banking facilities, hotel accommodations, street cars, and complete water and drainage systems. The main street, 100 feet wide, is paved with cedar blocks, over two miles in length, and is one of the handsomest streets in Canada. The city, like nearly all Canadian cities, is provided with the electric fire alarm system, and the equipment of the fire brigade is complete.

XVI.

INSURANCE.

The statistics of Insurance show great progress in the emp ment of this safeguard.

In 1869 the amount at risk in the Fire Insurance offices $188,359,809 (£38,704,075.)

On 1st January 1886, it was $623,779,669, which is $18,271, more than at the same date in 1885.

The amount of policies taken in 1869 was $171,540,475 an 1885, $500,453,437.

During the period 1869-1885, both years included, the total cash premiums received by the Insurance companies amounte $58,963,555, and the total losses paid by the companies $44,522,953. Included in this latter amount is the abnorm large amount paid during the year 1877 when the St. John caused a demand upon the companies for $8,490,919, as aga $2,867,295 in 1876, and $1,822,674 in 1878.

The superintendent of Insurance referring to the increase the amount at risk in 1884 compared with 1869—equal to $4 000,000—said. "although this immense increase may partly due to a larger use of insurance among the people and pa to a transfer of risks from local companies to the licensed o there can be no doubt that much the greater part of it is du the growth of business and property in the Dominion."

With regard to Life Insurances, the statistics show that in 18 the premiums for the year were $1,238,359, the amount of surance effected was $12,854,132 and the net amount in fo was $35,630,082.

In 1885, the premiums were $4,618,978, the amount effect was $35,730,211, and the net amount in force was $135,447,7

This by no means represents the whole of the life insuran effected in Canada, as there are many fraternal, benevolent, dustrial and religious associations doing business in life insuran either on the "old liner's" plan or on the co-operative or asse ment system.

The companies reporting to the Government do not inclu the whole business done in any one branch. The following stat

ment will show the total amount at risk and the total premiums paid, so far as reported to the Government at the end of 1884.

	AMOUNT AT RISK.	PREMIUMS PAID.
Fire Insurance.....	$605,507,789	4,980,128
Marine "	14,797,028	379,000
Life "	135,447,726	4,194,886
Accident "	22,810,733	137,660
Guarantee "	12,131,754	64,042
Total	$790,695,040	9,755,716

The increase in the amount of insurances effected is very marked during the period 1881-1884. For the eleven years 1870-80 the increase in fire insurances was $223,203,462. During the fours years 1881-4 it was $193,944,518. The first period shows an increase of $20,300,000 *per annum;* the second, $48,486,000 per annum.

The same fact of great increase is presented in the life insurance statistics. During the twelve years 1869-80, the annual average amount effected was $17,230,000. During the four years 1881-84 it was $20,875,000, the increase being in the face of the rapid spread of fraternal and other associations, not reporting to the Government.

The fire losses in Canada show a decrease favourable to the companies. In 1884 they were at the average rate of $5.37 per $1,000 of current risks. In 1881, 1882 and 1883 they were $7.35, $5.68, and $5.56 respectively.

The statistics of 1885 show that in the case of each of the 29 companies doing fire or fire and inland marine insurance, the premiums received were in excess of the losses paid.

XVII.

NEWSPAPERS.

Canada at the end of 1885 had 646 newpapers and periodicals published within her borders. Of these 71 were daily, 10 tri-weekly, 21 semi-weekly, 453 weekly, 13 semi-monthly and 73

monthly; 34 were devoted to religion, 19 connected with educational institutions, 3 devoted to education, 10 to agriculture, 1 each to fruit and vine culture, floriculture, dairying, photography, children, finance, railway, army, textiles, milling, stamp collecting, inventions, lumber, pharmacy, live stock; 4 were devoted to law, 7 to temperance, 8 to commerce, 2 each to poultry, insurance, science, sporting, hygiene. The various Friendly societies had journals in their interest as follows:—Foresters 3, Free Masons 2, workmen and Oddfellows 1. The Indian aborigines have one paper devoted to their interests.

According to languages, there were seven journals published in German, 51 (of which 15 were daily) in French, the remainder being in English.

According to provinces, the number of newspapers and periodicals was:—Ontario, 396; Quebec, 113; Nova Scotia, 46; New Brunswick, 38; Manitoba, 26; Prince Edward Island, 11; British Columbia, 8, and the North-West Territories, 6.

The extent to which the newspapers use the telegraph is seen in the fact that the number of words of press reports transmitted in 1885 was 65,250,000. The number of words of parliamentary reports sent by telegram during the session of 1885, was 4,600,000.

According to the census returns, there were, in 1881, 394 printing offices, employing 5,311 hands, and having an invested capital of $4,291,136.

In 1871 there were 308 printing offices, employing 3,497 hands and having an invested capital of $2,158,660.

Since 1881, the value of the printing presses imported for use in the Dominion has been $530,000, and since 1867, the total value of the printing presses imported for use within Canada is $1,231,360.

The first newspaper published in Canada was issued 21st June 1764. The first newspaper in Upper Canada, appeared in 18th April 1793.

XVIII.

Judged by the proportion of accumulated wealth to her population, or by the average earnings per inhabitant, Canada stands on an equal footing with the United States, being, in respect to earnings, only excelled by one or two countries.

The expenditure for houses in the cities shows that the average is about $20 per head of the urban population, which gives the Canadian cities a high position among the growing cities of the world. The money expended in the city of Toronto in 1885 was 84s per inhabitant. The assessed value of Montreal increased $9,000,000 during the past four years, and last year, the addition to buildings was over $3,000,000, while Winnipeg, with a population of nearly 20,000, added $1,700,000 to its buildings in 1883.

In the rural districts, the money expended on buildings in the Province of Ontario amounted to about $10,000,000 a year, or 36s per head of the rural population. The same proportion is, it is believed, maintained in the case of Manitoba. The other provinces, from the best information obtainable, have also added largely to the capital invested in buildings.

After paying for food, rent, clothing and taxes, the Canadian has 75 days in the year for pleasure, which is the same as in the United States.

The ratio of the public debt to wealth is somewhat over 6 per cent., and the ratio of taxation to earnings is about 6 per cent. This is considerably less than any European country, and close to that of the United States. Most of Canada's public debt is caused by expenditure on account of railways, canals and other works, and a considerable proportion of the interest on the debt is met by interest-bearing assets.

The unsold Crown lands of Canada administered by the Federal Government alone, at 3s an acre, would suffice to redeem the whole debt. The addition of the Crown lands under the control of the several Provincial governments would bring down the value required for that purpose to 2s 6d per acre.

The wealth of Canada is estimated at £650,000,000, and the income £118,000,000. This is equal to £148 wealth per inhabitant and £27 income. The percentage of income on capital is 18.1. In the United States it is 14.9, Europe 13.8, England 14.3, and Australia 22.6.

The accumulations of savings in Canada have averaged over $6,000,000 a year since 1878.

The assessed value of real and personal property in the Province of Ontario, during ten years, increased as follows :—

	Real Property.	Personal Property.
	$	$
1874, rural	206,892,278	20,463,878
" urban	118,591,838	26,546,804
Totals	$325,484,116	$47,010,772
1883, rural	400,446,524	26,351,197
" urban	182,784,609	30,120,454
Totals	$583,231,133	$56,471,661

The numbers of ratepayers in the same province increased from 379,572 to 463,184, and the average assessed value per acre of real property increased from $10.55 to 19.19.

An examination into the value of farm property in the Province of Ontario made during the years 1882 and 1883, resulted as follows:—

	1882.	1883.	Increase.
	$	$	$
Farm land	632,342,500	654,793,025	22,450,525
Buildings	132,711,575	163,030,675	30,319,100
Implements	37,029,815	43,522,530	6,492,715
Live stock	80,540,720	99,882,365	19,341,645

XIX.

MANUFACTURES.

The general condition of the manufacturing industries of Canada in 1881, and the advance made during the decennial period, may be gathered from the following table:

	1871.	1881.
Capital invested	$ 77,694,020	$165,302,623
Hands employed	187,942	254,935
Amount of yearly wages	40,851,069	59,429,002
Value of raw material	124,907,846	179,918,591
Total value articles produced	221,617,773	309,676,068

Since 1878 the development has been more marked than during any previous period in the industrial history of Canada. New manufactures have been started, and old ones enlarged. A partial investigation made in 1884-5, in the Provinces of Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island, affords the data from which to calculate that there had been in 1884 an increase over 1878 of 75 per cent. in the number of hands employed; of 75 per cent. in the amount of wages paid; of 93 per cent. in value of products; and of 75 per cent. in capital invested. The annual increase during the past six years in value of products is 15 per cent. against 4 per cent. during the decennial 1871-80.

The manufactures of Canada are yet in their infancy. The men who cut the first trees and guided the first ploughs—the pioneers of settlement—are a minished race among the present generation. But still they are with us in appreciable numbers. It cannot, therefore, be supposed that much time, thought or capital has been applied to manufacture. The industries of thirty years ago were confined chiefly to home-spun. The first woollen mill of which there is record was started in Quebec in 1826, which, with its old-fashioned machinery, sufficed to do the work required of it till 1837, when new machinery was introduced. In 1857 another woollen mill was started.

In 1858, a mill was started in Galt, Upper Canada, for the manufacture of tweeds, and in 1866, the proprietor, moving to Sherbrooke, in Lower Canada, built the largest woollen mill in Canada. Up to 1880, Canada exported large quantities of her wools and imported manufactured woollens. The returns of 1885 show that the export of Canadian wool was only 989,925 pounds, a decrease of 2,600,000 pounds as compared with the export of 1880. Canada in the latter year imported 6,950,000 pounds of foreign wool, to which she added 7,681,500 pounds of home grown.

The returns of 1885 show that the consumption of Canadian wools has largely increased, while the importation of woollen manufactures, principally from Great Britain, has very considerably increased, owing to the demand for the best qualities.

An analysis of the woollen imports of 1885 shows that, compared with 1880, there was a decrease in the importation of blankets, dress goods, and two-ply and three-ply ingrain, of which the warp is composed wholly of cotton or other material

than wool. There were increases in cashmeres, cloths, coatings, doeskins, tweeds, flannels, hosiery, shawls, yarns, ready-made clothing, carpets—brussels and tapestry—and "all other." The total import of woollen material was $9,053,226 in 1885, against $6,358,867 in 1880. Of the import of 1885, $8,504,756 was from Great Britain. The direction in which the woollen industry of Canada is being developed is in the working up of Canadian wools and the manufacture of articles from imported yarns. In doing this, the industry has assumed proportions in keeping with the growth of population and the increasing demand for woollen goods. The value of the output in 1885 may be put down at nearly eleven millions; an increase of 30 per cent. on the figures of 1881. The increase during the decennial period 1871–81 was at the rate of 4·3 per cent. a-year.

The cotton manufacture of Canada is younger than the woollen. The first mill was established about fifteen years ago. The industry has grown rapidly, and now there are twenty-four mills in the Dominion with a capacity of 600,000 spindles. The growth of the industry is seen in the increased imports of raw cotton for home consumption, which in 1869 were 1,245,208 pounds, and last year were 23,727,525 pounds. As a result of this development, the number of hands employed in 1885 showed an increase of 80 per cent. over those of 1880. The factories are supplied with the latest improvements in machinery, many of them are provided with electric light, and all are roomy and comfortable for the operatives. The people of Canada need annually about forty yards of cotton each. The imported cotton is about 42,000,000 yards, leaving 158,000,000 yards to be supplied by the Canadian factories.

The canal system of Canada has contributed materially to the development of manufactures. Manufactures of silk, wood, flour, paper, woollens, cottons, iron and steel, and others, have sprung up along the canals, utilizing the water power. There are now in the above lines 115 mills employing nearly 8,000 hands. The construction of railways has also done much to aid in the rapidity with which manufactures have increased.

Other Manufactures.

In all there were, according to the census of 1881, nearly three thousand industrial establishments in Canada. Some of the chief were:—

	Invested Capital.	Yearly Product.
	$	$
Agricultural Implements	3,995,782	4,405,397
Boots and Shoes	6,491,042	17,895,903
Cabinet and Furniture	3,943,419	5,471,742
Locomotive Works	1,630,598	3,956,361
Cheese Factories	1,021,435	5,464,454
Cotton	3,476,500	3,760,000
Distilleries	1,303,010	1,790,800
Engine Building	990,300	1,338,000
Fittings and Foundry Work	9,473,808	11,548,088
Flour Mills	13,857,923	41,772,372
Furriers and Hatters	1,934,862	3,352,961
Hosiery	630,821	1,385,730
Iron Smelting Furnaces	2,172,100	1,197,514
Meat Curing	1,450,000	4,084,133
Musical Instruments	670,000	1,221,000
Oil Refineries	1,812,700	4,050,000
Nail and Tack Factories	1,245,500	1,689,450
Paper Factories	2,237,950	2,446,700
Preserving Food	1,222,558	2,685,861
Rolling Mills	697,500	1,026,900
Saddle and Harness	1,323,845	3,233,973
Sash, Door and Blind Factories	1,996,858	4,872,362
Saw Mills	25,487,233	38,541,752
Shipyards	1,570,916	3,557,258
Sugar Refineries	2,150,000	9,627,000
Tanneries	6,386,222	15,144,535
Tin and Sheet Iron Works	1,993,054	3,738,246
Tobacco Factories	1,829,420	3,060,300
Wool Cloth	5,272,376	8,113,055

XX.

CANADIAN FORESTS.

The forests of Canada formerly extended in an almost unbroken stretch from the Atlantic Ocean to the head of Lake Superior, a distance of about 2,000 miles. The great plains of the North-West have always, within the memory of man, been sparsely timbered, but on the Pacific slopes of the Rocky Mountains down

the square timber involves great waste and the demand for it is fluctuating. During the early part of this century the export timber trade of Canada was confined to the United Kingdom and to the West Indies, but a great change has taken place. The pine lands of the northeastern States of the adjoining republic having become gradually depleted and unable to meet the requirements of the trade in those States, Canadians have successfully competed with the lumbermen of the West (Michigan and Wisconsin) till to-day their exports of wood to the United States almost equal in value those to the United Kingdom; the returns for the fiscal year, ending June 30, 1885, being:—Value of lumber to United Kingdom at shipping ports $9,577,581; do. to the United States $9,355,736. Similar extension on a smaller scale might be noted in other directions, particularly with the West Indies, South America, etc.

Timber was long the staple article of Canada's export trade, but with the settlement and development of the country, it now ranks after agricultural produce, still, it should not be forgotten that the farming interests of the Dominion owe their expansion to the lumber industry. In clearing the land of its primeval forest growth, the soil became amenable to culture, the lumberman was the first and best customer of the farmer; nay, he provided the farmers. The newly arrived immigrant, in the majority of cases, possessed little or no capital, but immediately on his arrival in the country he found regular and lucrative employment in the service of the lumberman, a few seasons' steady work afforded him the means of buying a lot of land; it gave him that knowledge of the woods and handiness to shift for himself, which are so essential to a new-comer placed in surroundings foreign to his past experience; hence he was enabled to select a suitable location and build his own dwelling, or shanty, without extraneous help; when he had raised a small crop of hay, oats and potatoes, he found a ready market at his door; when he was able to purchase a team of horses, he found employment for them during the winter months in hauling logs and he had them for his farm work during the summer—such in brief is the history of many a thriving farmer, or of his father, in Canada. The lumbermen are the pioneers who have opened up Canada. First clearing the land along the banks of the largest rivers, they have followed every tributary stream that could float, or be made to

float a log in the spring freshets, until they have at last penetrated every nook of what, at one time, was a trackless and impenetrable wilderness, hewing and constructing their roads, bridging and damming rivers, establishing depots which speedily developed into villages and towns, and withal contributing largely to the revenue of the country. One other advantage Canada owes to its timber trade, is the enormous increase of its mercantile marine which ranks fourth amongst the maritime nations of the world.

The timber lands of Canada are principally held by and under the control of the Provincial Governments. In the two great lumber-producing Provinces, Ontario and Quebec, the lands are divided into berths or limits of a certain number of square miles. The new limits are put up to auction and allotted to the highest bidder, that is the one who offers the largest bonus for cutting the timber over the limit; he has further to pay a small annual rental per square mile, and a due per cubic foot of squared timber, and one on every saw log. The lease is only for one year, but practically the lumbermen are never disturbed so long as they pay their rents and dues.

We now proceed to give area, lumber cut and exported, revenue, number of saw mills, etc.

Nova Scotia.

The lumber area of this province is held by the agriculturists or landowners, consequently the Government has no control over the cutting, and derives no direct revenue from the lumber. There are 1,190 saw mills, in which 4,160 hands are employed. The value of the lumber exported during the fiscal year, ending June 30, 1885, was estimated at $1,274,653.

New Brunswick.

The lumber area under license in 1883, was 3,117 square miles and the total revenue derived therefrom $175,352. Number of saw mills 478. Number of hands employed therein 7,175. Value of lumber exported during the fiscal year 1884–1885, $3,269,381.

Prince Edward Island.

Lumber lands in the possession of private owners. Number of saw mills 165. Number of hands employed 419. Value of lumber exported $14,459.

Province of Quebec.

Lumber area under license 41,260 square miles. Revenue derived therefrom $660,757. Number of saw mills 1,729. Number of hands employed 12,461. Estimated value of lumber exported $8,798,094. The port of Quebec being the principal shipping one for lumber on the St. Lawrence, a very large proportion of the exports comes from the Province of Ontario.

Province of Ontario.

Lumber area under license in 1884, 18,000 square miles. Revenue derived therefrom $464,529. Number of saw mills 1,761. Number of hands employed 16,846. Estimated value of lumber exported $7,371,028. (Almost exclusively shipped to the United States.)

In the North-West Territories and British Columbia the lumber lands have not yet been surveyed and therefore no opinion can be given as to their prospective value, though it is assumed that the forest resources of the latter province are immense, and only await enterprise to render them productive both to the revenue and to the export trade.

The census returns for 1881 give the production of the forest for home use and export as follows:—

Cut.	1881.
Square pine, white, cubic feet	40,729,047
" " red, " "	2,815,755
" oak, " "	5,670,894
Tamarac, "	4,653,575
Birch and maple, "	4,414,795
Elm, "	3,181,968
Walnut, black, "	59,032
" soft, "	754,219
Hickery, "	387,619
All other timber, "	48,956,958
Pine logs*	22,324,407
Other "	26,025,584
Masts and spars	192,241

*The census log is that quality of wood capable of giving 100 feet superficies of lumber one inch thick.

XXI.

EDUCATION.

Two and a-half centuries have passed since the first school was established in Canada. It was opened in the village of Quebec and its first pupils were a negro and an Indian boy. In 167[illegible] Bishop Laval laid the foundations of the Seminary of Quebec which was in 1852 erected into the University of Laval by Royal Charter.

The common school systems of the several Provinces of Canada are all based upon the principle of Free Education, the funds being supplied by local assessments, supplemented by legislative grants. In the Provinces of Ontario, Quebec and Manitoba there are separate schools for Roman Catholics. In the other Provinces the schools are unsectarian.

The Province of Quebec owes its present development to the efforts of Dr. J. B. Meilleur, who was made chief Educational Officer for Lower Canada in 1837.

The Province of Ontario is indebted for its excellent system to the laborious exertions of Revd. Dr. Ryerson, who was appointed Chief Superintendent in 1884.

Nova Scotia under the zealous advocacy of Hon. C. Tupper (now Sir Charles, and High Commissioner for Canada in London,) placed its Public School Act on the Statute Book in 1865.

New Brunswick and Manitoba followed in 1871, British Columbia in 1872, and Prince Edward Island in 1877.

The number of pupils throughout the Dominion, in 1885, in the public schools, high schools and universities, inclusive of private schools was 968,193. The average attendance was 555,405. The total expenditure for the year, not including school buildings, was $9,310,745, and the value of the school lands, buildings and furniture was $25,000,000.

According to the reports of the several Superintendents of Education there were nearly 18,000 teachers employed in the public schools.

From the census returns for 1881 it appears that in that year there were 274 boarding schools for young ladies and 13,064 pupils.

The extent to which the people of Canada tax themselves for Public School Education may be judged from the fact that in the

Province of Quebec out of the year's total expenditure of $3,162,416, only the sum of $353,677 was granted by the Provincial Legislature. In Ontario, of the total of $3,904,797, the amount granted by the Legislature of the Province was $267,084.

In Manitoba and the North West Territories where the public lands are under the control of the Federal Government, one of first acts of Parliament, after the acquisition of the region, was to set apart two out of every thirty-six sections of 640 each for school purposes.

XXII.

AGRICULTURE.

The great interest of Canada—that of Agriculture, is so well known and will be so fully set forth in the exhibits at South Kensington, that little need be said beyond what has already been said incidentally.

Under the guidance of Sir John Macdonald, who has for years directed public attention to the necessity for mixed farming, Canada has passed beyond the stage of a mere wheat-growing country and has developed her Agricultural industries in various directions. Greater attention has been given to stock-raising, to fruit-growing and to dairy products, as well as to the development of the varied industries of Canada.

Most important results have followed the efforts made to give proper direction to the public mind. These results show themselves in the much broader basis upon which the general industries of the country stand as compared with the United States.

An analysis of the domestic exports of the two countries gives the following results.

Table showing the relative proportions of the products of the named industries exported from Canada and from the United States in the year ended June 30th, 1885.

	Agricultural Products Including Animals.	Products Mine.	Products of Forest.	Fisheries.	Manufactures.
Canada	56.60	4.17	24.06	9.13	3.64
United States....	72.96	8.28	1.04	0.70	16.14

If we represent the export of the products of Canadian Mines at 1, Fisheries will stand at 2.2, Forest products at 5.8, Animals and their produce at 6.9, other Agricultural products at 3.9, Manufactures at 0.9, and Miscellaneous at 0.2.

The export value of Cheese and Butter in 1885 amounted to nearly $9,700,000, or about one-quarter of all the exports of the farm. The export of Cheese increased 78 millions pounds in 1885 over 1868.

On page 75 will be found a table showing the growth of the export trade in Beeves, Sheep and Hogs. In continuation of that table, the following will show the course of the export trade, 1st. in the products of animals and 2nd. in the export and import wheat and flour trade.

Table showing wheat and flour of wheat imports into and exports from the Dominion; estimated home production and surplus exported.

Year ending June 30.	IMPORTS. Wheat Bush.	IMPORTS. Flour Brls.	IMPORTS. Total Bush.	Yield Estim'td. Bush.	Home Consumption Estim'td. Bush.	EXPORTS. Produce of Canada. Wheat Bush.	EXPORTS. Produce of Canada. Flour Brls.	EXPORTS. Produce of Canada. Total Bush.	EXPORTS. Not Produce of Canada. Wheat Bush.	EXPORTS. Not Produce of Canada. Flour Brls.	EXPORTS. Not Produce of Canada. Total Bush.	Total Prod. & not Prod.	Exports more or less than Imports.
1875	5,105,158	467,786	7,441,088	21,840,760	20,686,399	4,383,022	302,783	5,895,937	2,670,522	6,198	2,701,512	8,598,449	+ 1,154,361
1876	5,838,156	376,114	7,718,726	24,674,163	21,044,819	6,070,393	415,504	8,147,913	3,177,907	4,432	3,200,157	11,358,070	+ 3,639,344
1877	4,589,051	549,063	7,334,366	18,888,564	21,291,640	2,393,155	278,605	3,736,180	1,165,940	7,834	1,205,110	4,941,290	— 2,393,076
1878	5,635,411	314,520	7,208,011	25,501,955	21,814,498	4,393,535	476,431	6,765,690	4,115 708	2,814	4 129,778	10,895,468	+ 3,687,457
1879	4,768,733	315,044	6,343,953	28,617,228	22,339,746	6,610,724	574,947	9,485,459	3,156,821	5,829	3,185,976	12,671,435	+ 6,327,482
1880	7,521,594	113,035	8,086,769	29,556,103	22,705,252	5,090,505	544,501	7,813,460	7,078,988	16,893	7,163,453	14,976,913	+ 6,890,144
1881	7,339,689	236,434	8,521,854	25,936,827	22,818,779	2,523,673	439,728	4,722,313	6,568,606	61,727	6,877,231	11,599,544	+ 3,077,690
1882	2,931,220	200,716	3,934,800	27,996,552	22,932,837	3,845,035	469,739	6,193,730	2,588,498	38,381	2,780,403	8,974,133	+ 5,039,383
1883	4,954,174	301,455	5,014,465	28,806,338	23,047,526	5,867,458	489,046	5,965,267	4,866,077	37,294	4,873,536	10,838,803	+ 5,824,338
1884	3,604,442	565,277	3,717,498	22,547,951	23,162,763	745,526	197,389	785,004	2,275,662	87,115	2,293,085	3,078,089	— 639,409
1885	3,128,143	565,562	3,241,295	25,518,017	23,278,576	2,340,956	123,777	2,365,711	3,082,849	37,277	3,090,305	5,456,016	+ 2,214,721

Exports from Dominion of Canada—Produce of Canadian Farms.

Year Ended June 30.	Tons Fresh Meat.	Tons Pork & Beef.	Tons Pres'v'd Meats.	Tons Bacon & Hams.	Tons Lard.	Tons Cheese.	Tons Butter.	Horses, No.	Value Horses. $	Eggs Dozens.	Wool, lbs.	Hides, Horns, Pelts. $	Poultry. $
1874.....	.....	7,968	6	9,035	963	10,625	5,461	5,399	570,544	4,407,534	2,764,796	394,069	79,224
1875.....	.....	2,180	.....	4,448	151	14,439	4,137	4,382	460,674	3,521,068	2,647,498	365,793	49,787
1876.....	.....	2,006	.....	5,014	289	15,636	5,469	4,800	442,338	3,880,813	2,707,229	207,774	74 317
1877.....	.....	3,748	660	7,045	241	16,040	6,557	8,306	779,222	5,025,953	2,476,484	515,332	48,307
1878.....	172	2,700	549	4,325	118	16,989	5,807	14,179	1,273,738	5,262,920	2,445,893	394,562	67,448
1879.....	135	1,138	318	2,075	139	20,720	6,387	16,629	1,376,794	5,440,828	3,013,687	416,516	90,880
1880.....	45	881	550	4,372	222	18,378	8,310	21,393	1,880,379	6,452,580	3,698,439	760,594	141,034
1881.....	81	1,317	496	4,640	93	21,989	7,879	21,993	2,094,037	9,090,135	1,404,123	445,699	133,693
1882.....	149	882	604	4,388	60	22,678	6,768	20,920	2,326,636	10,499,082	1,053,305	386,229	149,804
1883.....	177	641	805	1,898	22	25,911	3,863	13 019	1,633,291	13,413,744	1,375,572	479,140	161,229
1884.....	182	471	804	3,601	59	27,830	3,198	11,595	1,617,829	11,490,855	1,501,031	464,638	192,908
1885.....	255	490	115	3,639	28	35,560	3,272	11,978	1,554,629	11,542,703	980,825	621,626	175,889



Considerable attention has been given to the applicatior science to farming.

The Province of Ontario has established an agricultural lege, with a farm of 550 acres attached, utilized as follows College and ornamental grounds, 45 acres; garden, 5 acı experimental grounds, 24 acres; orchard, 20 acres; under gr ral cultivation, 324 acres; natural pasture, 60 acres; bush, acres; roads, 7 acres. The number of students is 91. In course of instruction, Agriculture occupies a prominent place connection with lessons on live stock, dairying, arboriculti chemistry, veterinary science, botany, entomology, book-keepi etc. The full course covers a period of two years. No inst tions in America can compete with the Ontario College in variety and excellence of its stock.

Hon. Mr. Carling, Minister of Agriculture in the Federal l liament, has, during the present session, brought into Parliam a plan for the further development of agriculture throughout Dominion. His plan provides for one central station, situa near the federal capital, with not less than 400 acres of land; sub-station for the provinces of Nova Scotia, New Brunswick Prince Edward Island jointly; and one each for Manitoba, North-West Territories and British Columbia. With the va ing conditions of climate and soil necessarily associated witl stretch of territory covering 4,000 miles from ocean to ocean, now accessible by rail, a station on the Atlantic, another on Pacific, with three intermediate ones, are considered absolut required.

The work which it is proposed should be undertaken by staff may thus be summarised:—

(*a.*) Conduct researches and verify experiments designed test the relative value, for all purposes, of different breeds stock, and their adaptability to the varying climatic or otl conditions which prevail in the several Provinces and in North-West Territories;

(*b.*) Examine into scientific and economic questions involve the production of butter and cheese.

(*c.*) Test the merits, hardiness and adaptability of new untried varieties of wheat or other cereals, and of field-cr grasses and forage plants, fruits, vegetables, plants and tr and disseminate among persons engaged in farming, garden

or fruit-growing, upon such conditions as are prescribed by the Minister of Agriculture, samples of such surplus products as are considered to be specially worthy of introduction;

(*d.*) Analyze fertilizers, whether natural or artificial, and conduct experiments with such fertilizers, in order to test their comparative value as applied to crops of different kinds;

(*e.*) Examine into the composition and digestibility of foods for domestic animals;

(*f.*) Conduct experiments in the planting of trees for timber and for shelter;

(*g.*) Examine into the diseases to which cultivated plants and trees are subject, and also into the ravages of destructive insects, and ascertain and test the most useful preventives and remedies to be used in each case;

(*h.*) Investigate the diseases to which domestic animals are subject;

(*i.*) Ascertain the vitality and purity of agricultural seeds; and

(*j.*) Conduct any other experiment and researches bearing upon the agricultural industry of Canada, which may be approved by the Minister of Agriculture.

XXIII.

THE MINERALS OF CANADA.

The mineral wealth of Canada is so great that an American authority, referring to it, says "to particularize the undeveloped wealth of this northern land would require volumes." As might be expected from her vast areas, covering a surface as large as Europe, and from her varied geological formations, Canada is marvellously rich in minerals; the chief of which, of economic importance, according to information derived from the reports of the Geological Survey, are classed as follows:—

1. Metals and their ores.
2. Minerals used in certain manufactures.
3. Minerals used in agriculture.
4. Minerals used as pigments.
5. Combustible and carbonaceous materials.
6. Refractory minerals.
7. Minerals applicable to building.
8. Minerals for grinding and polishing.
9. Minerals applicable to miscellaneous purposes.

Metals and their Ores.—Iron.—From Harrington's report, connection with the Geological Survey, we learn that the ir ores of the Dominion have a wide range, both geographically a geologically. From Vancouver Island, on the west, to Cape B ton, on the east, they occur at varied intervals.

Sir William Fairbairn, in "Iron, its history, properties processes of manufacture," says:—"In the Mineral and Geol cal Department of the Exhibition of 1862 were exhibited stri specimens of iron ore from the colonies, amongst which was remarkable collection from Canada, consisting of oxide, hematite and bog ores. The thickness of some of the beds f which the specimens were taken is worthy of notice. . . In Nova Scotia, some of the richest ores yet discovered o in boundless abundance. The iron manufactured from the of the very best quality, and is equal to the finest Swe metal."

Sir William Dawson on "The Iron and Coal of Nova Sc a Source of Wealth to the Dominion," says:—"It is a rem often made that the iron ores of Canada, rich and magnifi though they are, suffer in their practical value on accoun their distance from the mineral fuel required in so great a q tity, whenever smelting processes are undertaken on a l scale. To a certain extent, better means of communication, larger and more economical working, must remove this di vantage. It should, however, be borne in mind that the g iron deposits of Nova Scotia, equal in extent and value to others in the Dominion, are not so situated, but lie in close p imity to some of the greatest coal-fields in the world. . . Even in Great Britain itself, the two great staples of min wealth are not in more enviable contiguity, and the iron or Great Britain are, in general, neither so rich nor so accessibl those of Nova Scotia."

Magnetic ores occur abundantly throughout several cou of Ontario. An important deposit in the township of S Crosby, known as the "Chaffey Mine," has been worked years. It forms a bed 200 feet thick, and has been traced f long distance. A very fine and valuable ore, free from any t of pyrites, and with very little sulphur, exists as a large dep in North Crosby. The contiguous townships of Madoc, Marm Belmont and Seymour contain several beds of magnetic iron

which have yielded excellent iron. The Blairton Mines, in the township of Belmont, consist of a succession of beds, interstratified with layers of slate and crystalline limestone, occupying a breadth of about 500 feet. The Seymour ore bed of Madoc, other mines in Bedford, Bathurst and South Sherbrooke, are all important deposits. In the region west of Lake Superior, the Province of Ontario has a country rich in iron ore.

In the Province of Quebec there are large and valuable deposits of magnetic ore. In the County of Beauce a bed of granular iron ors about two-thirds magnetic, with a vein forty-five wide, occurs in serpentine.

Great masses of iron ore exist on the coast of British Columbia—some of the finest ores known in Canada, lying in close proximity to great beds of marble or limestone, and to the coal fields of Nanaimo.

Dr. G. M. Dawson, of the Geological Survey, describes the bed on Texada Island as "a very rich magnetic ore, assaying 68.4 of iron and a very low percentage of phosphorus and other impurities, with only twenty miles of the navigable waters of the Straits of Georgia between it and the Comox coal field, and both the iron and coal close to the water's edge."

Hematite iron ores are found in all parts of Canada. Geologically, our hematites have a wide range in time. They are found in the Laurentian, Huronian, Lower and Upper Silurian, Devonian, Carboniferous and Trias formations. An important deposit in Ontario exists in the township of McNab. The bed is thirty feet thick, and an analysis of an average specimen gave 58.8 per cent. of pure iron. Large amounts of red hematite are met with in Lake Nipissing region, Madoc, Gros Cap, Lake Superior. One of the most valuable deposits in Quebec Province is near Hull, opposite Ottawa,—a specular ore, assaying from 64 to 68 per cent. of metallic iron.

In New Brunswick, large deposits of hematite ore are found near Woodstock, on the River St. John, and the iron produced is remarkable for its great hardness and strength. When converted into wrought iron, it is pronounced, on the authority of Sir William Fairbairn, to be specially suited for the plating of iron-clad war vessels. It is also admirably adapted for steel.

Titanic iron ores are found in different parts of Canada. Some of the ores in Quebec contain from 20 to 30 per cent. of titanic acid.

Limonite and bog ores are also widely distributed. In Nc Scotia, limonite of the brown hematite variety is found very pı near the East River in Pictou County, and the Londonde deposits in Colchester County are among the largest and m extensively worked in the Dominion. The ore is of the b quality, and the average yield from smelting is over 50 per ce

In Quebec, the bog ores exist largely at Vaudreuil, where beds are from four to eight feet thick, and contain about 52 cent. of iron.

Clay iron-stones are found in rocks of various ages in all Provinces. Those of the Tertiary age occur in the lignite-bear strata west of Red River. Of these, Mr. G. M. Dawson writes "Should these ores ever come to be worked, limestone for use a flux could be obtained in considerable quanties from the bou ers of Silurian age which strew the plains."

For fuller statements, reference may be made to Mr. Harri ton's report in the Geological Reports of 1873-74, and to a w on the "Manufacture, Consumption and Production of Iron Canada," by J. H. Bartlett, 1885.

From what has been said, it will be seen that Canada posse inexhaustible supplies of rich ores of this precious metal, thou as yet, but very partially developed.

The imports into Canada for home consumption of iron, st rails, castings, cutlery, machinery, hardware, etc., since con eration, amount to $243,493,915, divided into three-year peri as follows:—

1868–70	1871–3	1874–6	1877–9	1880–2	1883–5
$22,170,672	$52,359,665	$52,917,570	$28,504,125	$40,754,029	$46,787,8

The export of iron, castings, machinery, steel and steel ma factures, the production of Canada, in 1885, was $296,122 and iron ore $132,074.

For a country having 11,000 miles of railway, with a weigh over a million tons of rails; and possessing, for the manufact of iron natural advantages, which few, if any, places in the w surpass, the development of Canada's iron industry is won fully slow.

To complete the statement we give the returns of the census

	No.	Capital invested.	Hands.	Value Produc
Iron smelting furnaces and steel making in 1871	6	$492,000	624	$298,0
" " " " 1881	13	490,000	778	914,7

There appears to be a good field for skill, enterprise and capital in connection with our iron industry.

Other Metals.

The only ore of lead met with in Canada is the sulphuret or galena. At Thunder Bay and the Nepigon region to the north of Lake Superior, very numerous and valuable veins of ore are found.

Several veins occur in the Provinces of Ontario, Quebec, Nova Scotia and New Brunswick. In the Province of British Columbia, galena has been found in many places. It also appears in connection with gold, both in the lodes and superficial gravels of the Cariboo district.

Copper occurs in Canada in the forms of native, or metallic copper and of the sulphuretted ores. The former is confined principally to the rocks of the upper copper-bearing series on Lake Superior. The latter are widely diffused. In Ontario, on the northeastern shore of Lake Huron, extensive veins of rich copper ores have been mined for years, often with great profit. On Lake Superior, the native copper, which has been so extensively and profitably worked on the Michigan shore, also exists in large quantities over the Canadian shore.

In Quebec, and the other eastern provinces, deposits of copper have been found and, in many cases, mined.

In British Columbia, masses of native copper have been found in various parts of the province.

Very fine specimens of purple copper ore are found in the neighbourhood of Howe Sound and other localities.

In the Ohio district of Nova Scotia, an opening was made in 1884 on a deposit of yellow and grey copper ore, yielding 1,120 pounds of copper, 6⅔ dwts. of gold and 3 oz. of silver to the ton.

Native silver occurs in large quantities at several points on Lake Superior, and the copper ores of the Province of Quebec contain small quantities of silver.

At Thunder Bay, on Lake Superior, silver in a native state has been discovered in many localities and several mines have produced large results.

In British Columbia, the best known argentiferous locality is that near Hope on the Fraser River. The lodes occur at an elevation of 5,000 feet. Specimens assayed have given high yields

of silver. In the interior of Cherry Creek, between Okanagan and Arrow Lakes is a locality from which specimens of remarkably rich silver ore have been brought.

Gold exists over a large extent of the Eastern Townships in Quebec, and has attracted labour and capital. It is also found in Ontario at Madoc and Marmora. Practically, however, its production is limited to the Provinces of Nova Scotia and British Columbia. In the former province gold occurs principally in quartz veins in stratified slate and quartz ore rocks along the Atlantic coast. According to the report of the Inspector of Mines, there were twenty-seven gold mines in operation in 1884, yielding from 25,186 tons of quartz 16,080 ounces of gold as the result of 118,087 days labour. In 1885 the yield was 21,000 ounces. Since 1862 the total number of ounces extracted has been 366,976 from 495,923 tons of quartz crushed.

In British Columbia gold has been found in paying quantities at various points along a northwest line for more than ten degrees of latitude. There is scarcely a stream of any importance in the province in which the colour of gold cannot be found.

In the official report it is stated as follows :—"In British Columbia a belt of rocks, probably corresponding to the gold rocks of California, has already been proved to be richly auriferous and it may reasonably be expected that the discovery and working of rich metalliferous deposits of other kinds will follow. Promising indications of many are already known. With a general similarity of topographical features in the disturbed belt of the west coast, a great uniformity in the lithological character of the rocks is found to follow, so that while a comparatively short distance from southwest to northeast may show considerable lithological change, great distances may be traversed from southeast to northwest and little difference noted. In British Columbia, so far as geological explorations have yet gone, they have tended to show a general resemblance of the rocks to those of the typical sections of California and the Western States."

According to returns it appears that since 1858 the yield of gold has been 2,562,000 ounces, which at $19 an ounce, is equal to $48,672,128, the amount given in the returns. This quantity has been mined under most disadvantageous conditions. Without railway communication supplies have necessarily been greatly increased in price by the cost of transport, thus deterring the miner from the prosecution of his work. All this is changed by

the completion of the Canadian Pacific, and gold mining in British Columbia will undoubtedly receive a powerful stimulus by reason of the more favourable circumstances under which it will henceforth be pursued.

Gold is also distributed at certain points on the east side of the Rockies, and has been met with in the branches of the Saskatchewan River from Edmonton to the Forks.

Antimony is found in the region west of Lake Superior, New Brunswick and Nova Scotia. The Inspector of Mines for the latter province, in his report for 1885, says:—"During the past year a valuable mine of antimony ore has been opened out at Rawdon, Hants county. The vein, which is of grey antimony ore, is from four to eighteen inches in width. An analysis showed the ore to be almost of chemical purity, having little beyond traces of foreign material."

According to the trade returns 717 tons were exported from this mine, in 1885.

Among other metals mentioned as having been found in Canada are nickel, cobalt, zinc, silver and platinum.

Of minerals used in certain chemical manufactures, Canada has Iron Pyrites, Chromium, Manganese, Titanium, Molybdenum and Magnesia.

Of minerals used in agriculture, Canada has Apatite, Gypsum, Marl, and Salt very widely spread.

In Ontario, phosphate of lime or apatite is found in large quantities all through the district north of Kingston and Belleville; on the line of the Rideau canal, near Perth, it extends over an area of many square miles.

The chief supply, however, is obtained from the deposits on the north side of the Ottawa river, in the region drained by the Lièvre and Gatineau rivers.

The trade returns for 1885 show that the exports of this article amounted to 18,984 tons, all of which went to Great Britain with the exception of 1,360 tons exported to Germany and 745 tons to the United States. During 1885 the production increased. New beds were discovered near the sources of the Lièvre and Gatineau, 150 miles from the mouth.

The Canadian Pacific Railway have constructed a branch line to facilitate the transportation of the products of the mines.

Gypsum is found in great abundance in Ontario. The outcrop extends from the Niagara river to Lake Huron for 150 miles. A

very large amount is annually raised and used as a fertilizer, or ground for cement and stucco.

In Quebec the supplies come mainly from the Magdalen Islands. Extensive and practically inexhaustible beds are found in New Brunswick and Nova Scotia.

Marl or carbonate of lime is found in many localities.

Salt was discovered in 1866 near the town of Goderich, Ontario. The borings go down through the limestones of the Onondaga and Guelph formations and two or three hundred feet of red and blue shales which carry rock salt as their base. The area is extensive, extending a distance of over 40 miles long by 7 or 8 wide. In 1881, 472,000 barrels of salt were produced in this region.

Among minerals used for pigments are iron ochres which are found and extensively manufactured in Quebec, and Ontario, and in smaller quantities in the eastern provinces.

Sulphate of barytes is also widely distributed.

We came next to combustible and carbonaceous materials.

The coal areas of Canada are estimated at 97,200 square miles, not including areas known, but as yet quite undeveloped, in the far North.

It is impossible to treat this important subject fully in the limits of a hand-book. The records of the Geological Survey, Sir William Dawson's "Acadian Geology" and other well-known publications must be consulted for details.

There are: 1st. The coal fields of Nova Scotia and New Brunswick; 2nd. Those of the North-West Territories; 3rd. Those of the Rocky Mountains; and 4th. Those of British Columbia.

1st. The coal areas of Nova Scotia and New Brunswick cover about 18,000 square miles. They are divided into the Cape Breton, Picton and Cumberland basins, all in Nova Scotia; New Brunswick containing, so far as known, no seams of sufficient magnitude to be successfully worked in competition with the Cumberland mines.

The total coal sales from these three basins, in which 196 pits are worked, have increased with considerable rapidity as the following statement will show:—

1785	to	1790,	tons 14,349	1841	to	1850,	tons 1,533,798
1791	"	1800,	" 51,048	1851	"	1860,	" 2,399,829
1801	"	1810,	" 70,452	1861	"	1870,	" 4,927,339
1811	"	1820,	" 91,527	1871	"	1880,	" 7,377,428
1821	"	1830,	" 140,820	1881	"	1885, (5 yrs.)	6,099,016
1831	"	1840,	" 839,981				

It is worthy of note that the utilization of material which formerly went to waste has made great progress during recent years. The total sales of slack coal since 1877 have been as follows: 1877, 109,155 tons; 1878, 131,528; 1879, 113,719; 1880, 177,977; 1881, 209,011; 1882, 247,100; 1883, 281,105; and 1884, 316,132 tons. The sales of these coals to the United States have fallen from 404,252 tons in 1866, (the year before that country imposed a duty of $1.25 a ton) to 64,515 tons in 1884. The increased consumption is chiefly due to the increased demand in Canada for manufacturing and other purposes.

The seams in the Cape Breton basin vary in thickness, those at present worked being from four feet and a half to nine feet thick. The total available coal of the Cape Breton area is estimated at 800,000,000 tons.

In the Pictou coal field, the seams worked vary from six feet to 34 feet 7 inches in thickness. A purely conjectural estimate places the amount of available coal in this basin at 250,000,000 tons.

The Cumberland basin includes about 300 square miles. The principal seams, worked for any length of time, are four and six feet thick; other seams, more recently worked, are from 11 to 13 feet thick.

Taking one analysis from each coal field, we have as follows:—

	SYDNEY MINE C. BRETON.	ALBION MINE PICTOU.	SPRING HILL CUMBERLAND.
Moisture.....	3.04	1.29	1.40
Volatile Combustible.....	31.14	25.44	31.25
Fixed Carbon.....	61.50	61.55	61.58
Ash.....	4.32	10.25	5.76

There are no coal measures from New Brunswick westward, until the prairies of Manitoba and the North West Territories are reached. Of this coal basin, Dr. George M. Dawson, of the Geological Survey, in a letter dated 12th January 1866 to the Hon. John Carling, Minister of Agriculture, writes as follows:—

"The known area of true and lignite coals of the best quality, extends along the base of the Rocky Mountains from the 49th parallel to the vicinity of Peace River, a distance of 500 miles, with an average width of, say 100 miles, giving a total area of 50,000 square miles. It is not intended to affirm that the

whole of this area is continuously underlain by coal, but outcrops of coal are so general throughout it, that taken in connection with the character and regularity of the strata—it may safely be stated, that it is, throughout, a coal field. An additional area stretching eastward, as far as the Souris River and Turtle Mountains, yielding lignites only, but these often of very good quality, and well fitted for local uses, may be roughly estimated at 15,000 square miles."

In this last mentioned region analysis gives the following result:—

Water	15.46
Volatile combustible	37.97
Fixed carbon	41.21
Ash	5.36

Analysis of two or three coals from the first mentioned coal region of the North-West gives the following results:—

	Belly River	Bow River.	Peace River
Water	6.52	12.37	2.10
Volatile combustible	31.03	32.33	21.54
Fixed carbon	56.54	46.39	71.63
Ash	5.91	8.91	4.73

The third coal area of Canada is that in the Rocky Mountai

Of this Dr. G. M. Dawson writes:—"The areas within t Rocky Mountains, though small as measured by miles, cont much coal of the best quality. One of these areas, on the B and Cascade Rivers (crossed by the Canadian Pacific Railwa has been found to hold several good seams of anthracite of exc lent quality."

The fourth area is that of the Pacific coast. The extent of t can be very roughly estimated, as no thorough examination h been made. Dr. Dawson gives the following estimate:—

Nanaimo coal basin (coals), approximately correct	200	square mil
Comox coal basin (coals), rough approximation	700	" "
Queen Charlotte Islands and other areas of coal-bearing rocks (very rough approximation)	800	" "
Tertiary lignite-bearing rocks in different parts of British Columbia, south of the 54th parallel of latitude (very rough approximation)	12,000	" "

In quality the Vancouver Island bituminous coals are found be superior for all practical purposes to any coals on the Paci

coast. They rank in San Francisco with the West Hartley coals. These widely-spread coal deposits on Vancouver Island entitle the Province to be called the Britain of the North Pacific.

The output for 1885 was 357,548 tons, and the export 275,621 tons, almost the whole of which was shipped to the United States. The yield in 1874 was 81,000 tons.

In the Comox district the productive measures show ten seams of coal, with a total of 29 feet 3 inches, the thickest seam being 10 feet.

The character of the coal is evidenced by the following analysis :—

	Slow Coking.	Fast Coking.
Water	1.47	1.47
Volatile combustible	28.19	32.69
Fixed carbon	64.05	59.55
Ash	6.29	6.29

Anthracite in 6 and 3 feet seams, comparing favorably with that from Pennsylvannia, has been found in Queen Charlotte's Island.

Samples analyzed gave the following results :—

	Sample 1.	Sample 2.
Water	1.60	7.89
Volatile combustible	5.02	4.77
Fixed carbon	83.09	85.76
Ash	8.76	6.69
Sulphur	1.53	0.89

The positions occupied by the coal-fields of Canada are so advantageous that an enhanced value is given to them when regarded from an Imperial point of view. The Cape Breton coal basin opens out on a bold coast abounding in harbors, on the portion of the American continent nearest to the British Isles. The Pictou coal-field is close to the Imperial naval arsenal of Halifax, "the western sentinel of the Atlantic."

The Cumberland coal basin is close to the great port of St. John, New Brunswick. All three coal-fields are so situated that they render easy of maintenance the Intercolonial Railway, which connects the Provinces in the East with the St. Lawrence Provinces.

The coal-fields of the North-West will supply with fuel the future millions of people inhabiting that vast region.

The coal measures of British Columbia meet the wants of Empire on the Pacific Ocean, as those of Nova Scotia do on Atlantic, and Victoria stands in the same relation to the Pac that Halifax does to the Atlantic.

Canada will present herself, in company with her sister c nies, at the Colonial and Indian Exhibition, able to show that possesses this truly British mineral in great abundance, anc highly advantageous situations, and that she can add to the c mon stock a large proportion of the whole.

Besides coal, both bituminous and anthracite, Canada has pe leum widely diffused. In Ontario, according to the census ret of 1881, the production of crude petroleum for the year 1880 15,490,622 gallons, an increase over that of 1871 of 3,500,000 lons. In Gaspé, in the Province of Quebec, it is found ov wide extent of country. The reports from the North-West s that it is found over a vast extent of that country.

Peat exists in large deposits in all parts of Canada.

Next in order we come to the refractory minerals. Ca has of these plumbago, mica, soapstone and sandstone.

The plumbago is a pure crystalline plumbago, and is wi distributed. One specimen exhibited weighs 3,000 pounds.

The others mentioned are also very generally found.

Materials for bricks, pottery and glass abound. Limest for common lime, is abundant, as also are argillaceous limest and dolomites, yielding good hydraulic cements.

Grinding and polishing materials are found in all the Provir

Of building stones Canada possesses an abundance. Gra comparing favorably with the best granites of Great Britain New England is found in many localities. Sandstones of var textures and colors abound. The collection of marbles in Geological Museum at Ottawa indicates a profusion of all ki Flagstones and roofing-slates, lithographic stones, etc., are ab ant and of good quality.

Canada, as yet, has afforded but few gems. Agates, ameth and jasper are found in the Lake Superior region and in o parts of Canada.

There are numerous mineral springs throughout Canada.

XXIV.

THE FISHERIES OF CANADA.

These are the largest in the world, embracing nearly 5,600° miles of sea coast, in addition to inland seas, innumerable lakes and a great number of rivers.

With regard to their value, statistics prove it to be fully in proportion to their extent. The products of our fisheries, exported and sold on the Dominion markets in 1885, amounted to $17,722,973; but this by no means represents the value of the total catch, for in Canada the home consumption is very great—100 pounds per inhabitant being calculated to 30 pounds in England. As the fisheries extend throughout the length and breadth of the Dominion, almost every settler is afforded an opportunity for catching fish for domestic use. This renders it impossible to give full returns of the whole catch. It is approximately estimated that the value of the home consumption last year was $13,000,000, giving a total of $31,000,000 as the yield from less than half of the Canadian fisheries, exclusive of the catch by foreign fishermen.

The sea fisheries are well nigh inexhaustible—a fact attributable to the fishes' food supply being brought down by the Arctic currents from the northern seas and rivers. This consists of living slime, formed of myriads of minute creatures which swarm in the Arctic seas and are deposited in vast and ever renewed quantities upon the fishing grounds.

Salt water fishes of nearly every variety are to be found along the Canadian coasts, but the marine fisheries of greatest commercial importance are the cod, herring, mackerel, lobster and seal.

The fresh water fisheries are also of great importance, the immense lakes and rivers supplying an abundance of fish of great commercial value, both for home consumption and export, besides providing sportsmen with some of the finest salmon and trout fishing to be found anywhere. Salmon abound in a great many of the Canadian rivers.

OFFICIAL VALUATION OF THE YIELD OF THE FISHERIES BY PROVINCES

PROVINCE.	1876.	1885
Nova Scotia	$6,029,037	$8,283
New Brunswick	1,953,496	4,005
Prince Edward Island	494,966	1,293
British Columbia	104,697	1,078
Quebec	2,097,664	1,719
Ontario	437,229	1,342
Total	$11,117,089	$17,722

The values of the yield of some of the principal fish in are: Cod, $4,536,732; Herring, $2,475,118; Lobsters, $2,613 Salmon, $1,152,348; Mackerel, $1,509,424; Haddock, $651 Trout, $474,932; Sardines, $355,731; Whitefish, $286,955.

THE DESTINATION AND VALUE OF CANADIAN FISH EXPORTS FOR 1876 AND 1885.

NAME OF COUNTRY.	1876.	1885
United States	1,475,330	3,560
British West Indies	1,348,637	1,152
Spanish West Indies	825,287	718
Great Britain	687,312	1,543
South America	297,609	295
French West Indies	239,724	13(
British Guiana	190,661	9(
Italy	139,387	13
Hayti	90,999	
Danish West Indies	52,988	3
Portugal	51,836	12
Newfoundland	50,299	1
France	.....	3
Australia	16,492	8
Madeira	14,960	1(
Gibraltar	.....	1
Other countries	19,700	1(
Total	$5,501,221	$7,960

Much attention has of late years been given to the dev ment of the fisheries. The Federal Government has gran yearly sum of $150,000 as a bounty, to be divided accordi catch, among the vessels and boats engaged in the prosecuti

the sea fisheries. One result has been an increase in the number, and a great improvement in the build and outfit, of fishing vessels.

It has also provided fish-breeding establishments, of which there are twelve, in different parts of the Dominion, and millions of fish are yearly hatched and placed in the rivers and lakes. Large sums of money have also been expended in harbour improvements and breakwaters. The principal fishing stations in the Gulf of St. Lawrence have been connected with each other by land telegraphs and cables, by which means information is promptly given of fish "strikes" at any particular point, thereby saving the fishermen days and nights of fruitless exposure and cold.

The numbers of men, vessels, boats and fathoms of nets employed in the fisheries are as follows:—

STATEMENT SHOWING THE NUMBER OF VESSELS, BOATS, MEN ENGAGED IN FISHING, WITH THE QUANTITY OF NETS USED, FOR THE YEAR 1885.

PROVINCES.	MEN.	VESSELS.			BOATS.		NETS.	
	No.	No.	Ton'ge.	Value.	No.	Value.	No. of Fath'ms.	Value.
				$		$		$
Nova Scotia..	29,905	711	31,285	1,428,308	12,693	316,677	1,475,913	566,550
N. Brunsw'k.	10,185	196	8,297	78,836	4,879	147,567	430,739	241,360
P. E. Island..	3,535	53	2,044	55,900	1,039	34,625	47,985	24,649
Quebec	11,322	160	8,734	340,679	7,949	187,330	207,268	160,423
Ontario	2,716	28	2,523	63,310	1,045	121,863	710,639	96,222
B. Columbia.	1,830	34	845	54,600	867	44,195	141,850	130,080
Totals....	59,493	1,177	48,728	2,021,633	28,472	$852,257	3,014,384	1,219,284

These figures show an increase over those of 1875, of 6,309 in the number of men employed; of 3,561 in the tonnage of vessels; of 6,262 in the number of boats, and of $558,010 in the total value of vessels, boats and nets.

Including weirs and other fishing materials, the total value of the fishing "plant" in 1885 was $6,697,460.

XXV.

SHIPPING OF CANADA.

Number of vessels and tons on the Registry Books of the Do the 31st December in each year ; also number and t these being steamers.

	No. of Vessels.	No. of tons.	New vessels built and registered.		No. of Steamers.	G n
			No.	Tons.		
1873	6,783	1,073,718	.....	.....	554	
1874	6,930	1,158,363	496	190,756	595	
1875	6,952	1,205,565	480	151,012	661	
1876	7,192	1,260,893	420	130,901	689	
1877	7,362	1,310,468	432	120,928	.....	...
1878	7,469	1,333,015	340	101,506	771	
1879	7,471	1,332,093	265	74,227	775	
1880	7,377	1,311,218	271	65,441	797	
1881	7,394	1,310,896	336	74,060	821	
1882	7,312	1,260,777	289	61,142	783	
1883	7,374	1,267,394	374	74,090	843	
1884	7,254	1,253,747	387	72,411	1,073	
1885	7,315	1,231,856	340	43,179	1,181	

Summary by Provinces.

1885.

PROVINCES.	No. of Vessels.	No. of Steamers.	Gross tonnage Steamers.	T
Nova Scotia.....	2,988	76	9,291	
New Brunswick....	1,060	76	10,383	
Quebec.....	1,631	328	89,845	
Ontario.....	1,223	526	81,063	
P. E. Island.....	227	12	3,055	
British Columbia...	123	74	13,872	
Manitoba.....	63	39	5,061	
Total.....	7,315	1,181	212,570	

Assuming the average value to be $30 per ton, the va registered tonnage of Canada on the 31st December last $36,955,680.

XXVI.

PRICES IN CANADA.

The following table shows the average rates of wages in Montreal and in Toronto for the year 1885 :

Employment.	Montreal Wages.		Toronto Wages.	
	From	To	From	To
	$ c.	$ c.	$ c.	$ c.
Farm labourers, per day, without board	1 00	1 25	1 00	1 25
do per month and board	12 00	15 00	12 00	14 00
Female farm servants, per month, with board	5 00	10 00	5 00	10 00
Masons, per day, without board	1 50	2 00	2 00	2 50
Bricklayers do	1 50	2 50	2 50	3 00
Carpenters do	1 50	2 00	1 75	2 00
Lumbermen, per month, with board	15 00	20 00	15 00	20 00
Shipwrights, per day, without board	1 50	2 00	1 75	2 00
Smiths do	1 50	1 75	1 50	2 25
Wheelwrights do	1 25	1 50	1 50	2 00
Gardeners, per month, with board	15 00	20 00	15 00	20 00
do per day, without board	1 00	1 25	1 25	1 50
Female cooks, per month	8 00	10 00	9 00	12 00
Laundresses, per day	0 75	1 00	0 75	1 00
Female domestics, per month	5 00	10 00	6 00	8 00
General labourers, per day, without board	1 00	1 25	1 25	1 50
Miners, per day	1 50	2 00	1 00	2 00
Mill hands, per day	1 00	1 50	1 00	
Engine drivers, per day	1 75	2 50	.....	.....
Saddlers, per day	1 50	2 00	1 25	2 00
Bootmakers, per day	1 25	2 00	1 25	2 00
Tailors, per day	1 00	2 00	1 25	2 00

The cost of articles of daily consumption by the working classes of Canada in the older provinces, is as follows :

Provisions, Clothing, &c.

	$ c.	$ c.		$ c.	$ c.
Bread, best white, 4 lbs.	0.11	@ 0.12	Soap, yellow, per lb.	0. 3	@ 0. 5
Butter, packed, per lb.	0.13	@ 0.15	Sugar, brown, per lb.	0. 5	@ 0. 6
do fresh, per lb.	0.15	@ 0.20	Salt, per bushel	....	0.25
Beef, per quarter	0. 6	@ 0. 8	Tea, black, per lb.	....	@ 0.30
do per lb.	0. 8	@ 0.12	do green, do	....	@ 0.30
Veal, per carcase, 5c @ 7c; per lb.	0. 9	@ 0.10	Tobacco, per lb.	0.25	@ 0.45
Bacon, per lb.	0.10	@ 0.14			
Beer, per quart	....	0 10	Factory Cotton, 30 inches	0. 3	@ 0. 4
Candles, per lb.	0. 9	@ 0.10	do do 33 inches	0. 4	@ 0. 9
Coal Oil, per gallon	....	0.20	Cotton, white	0. 5	@ .12½
Cheese, per lb.	0.10	@ 0.15	Coats, under, tweed	4.00	@ 8.00
Coffee	0.25	@ 0.30	do over do	7.00	@ 9.00
Cornmeal, per 100 lbs	2.00	@ 2.50	Trousers	2.50	@ 4.50
Coal	4.50	@ 6.00	Shirts, flannel	1.25	@ 2.00
Ducks, per pair	0.50	@ 0.60	do cotton	0.50	@ 1.00
Eggs, per dozen	0.10	@ 0.15	do underwear, all wool	0.65	@ 0.90
Flour, per 100 lbs.	2.50	@ 2.70	Drawers, woollenwear	....	0.75
do buckwheat, per 100 lbs.	....	2.50	Hats, felt	1.00	@ 2.00
Fish, dry or green cod, per cwt.	5.00	@ 6.00	Socks, worsted	0.15	@ 0.25
Firewood, per cord, from	2.50	@ 5.00	do cotton	0.10	@ 0.12
Geese, each	0.50	@ 0.60	Blankets, per pair	2.00	@ 5.00
Ham, sugar cured, per lb.	0.10	@ 0.15	Flannel, per yard	0.15	@ 0.50
do shoulders, per lb.	0. 8	@ 0.10	Cotton Shirting, per yd.	0.08	@ 0.15
Herrings, per barrel	4.00	@ 4.50	Sheeting, per yard	0.08	@ 0.15
Milk, per quart	0. 4	@ 0. 6	Canadian cloth, per yd.	0.37	@ 0.75
Mutton, per carcase	0. 5	@ 0. 8	Shoes, men's	1.50	@ 2.50
do per lb.	0. 8	@ 0.10	do women's	1.25	@ 1.75
Oatmeal, per 100 lbs.	2.25	@ 2.50	Boots, men's	1.75	@ 2.50
Pork, per carcase	0. 5	@ 0. 8	do women's	1.25	@ 2.75
Potatoes, per bushel	0.30	@ 0.40	India rubber overshoes, men's,	....	0.75
Rice, per lb.	....	0. 5	do do do women's	....	0.60

XXVII.

ANIMAL LIFE AND HUNTING GROUNDS.

Canada has long been looked upon as the sportsman's paradise, possessing as it does so large a share of indigenous animals. The stringent game laws of the old world are modified here, such laws of the kind as do exist having reference chiefly to the "close," or breeding season. Game here is common property; it affords food for the settler, sport for the disciple of St. Hubert, and the hunter and trapper each find pecuniary profit in its pursuit.

Wild beasts, or beasts of prey, such as panthers, wolves, and bears, although formerly abundant, are now rarely to be found, except in the depths of the great Northern forests, or in the fastnesses of the mountain ranges. In the almost untrodden depths of the Rocky Mountains and the Selkirk range in the Far West, abundant trophies of the chase can yet be obtained by the adventurous sportsman who may turn his steps in that direction.

The waters of Canada teem with wild fowl in the spring and autumn, especially during the latter season, when migrating to winter quarters in the South; and, as to the finny tribe, nowhere else on the American side of the Atlantic, can such fishing be had as the various provinces of the Dominion afford.

To present to view as concisely as possible the advantages Canada offers to the sportsman, it will be well to give a description of the various kinds of animals and of the chief hunting grounds.

Of wild animals, then, there are the panther, wild cat, lynx, fox, wolf, bear, moose, cariboo, elk, deer, antelope, mountain goat, mountain sheep, musk ox, buffalo, squirrel, marmot, hare, rabbit, porcupine, raccoon and badger. Of fur-bearing animals, there are the fisher, sable, weasel, ermine, mink, wolverine, otter, skunk, beaver, and, on the sea coast, the seal.

Of feathered game, there are grouse (known here as partridge), prairie fowl, quail, geese, ducks, swans, brant, curlew, snipe, woodcock, plover, pigeon, cranes; whilst of hawks, eagles, owls, crows, and other carrion birds, there are many varieties. Of smaller birds, beautiful either in plumage or for song, there is a vast abundance during the summer, and the ornithologist may revel to his heart's content in collecting specimens of great beauty.

Of fish there are, in the bays and harbours of the coast, mackerel, herring, cod, haddock, halibut (a species of enormous turbot), hake, pollock, shad, smelt, and eels, whilst of shell-fish and lobsters there is an abundant supply. The rivers connecting with the sea on both the Atlantic and Pacific coasts contain splendid salmon, whilst the inland rivers and lakes abound with salmon trout, whitefish, maskinonge, pike, pike-perch or doré, perch, bass, sturgeon, and a variety of smaller fish, and all the mountain streams are alive with brook trout.

Reptile life is not largely developed in Canada, a fact due, probably, to the long period of cold weather prevalent, and, apart from rattlesnakes, which are now comparatively rare, there are no poisonous snakes of any consequence. Lizards are not numerous, and attain no great size, but frogs and toads are abundant. The *Menobranchus* of the great lakes, a peculiar water lizard with external gills, and a similar reptile, the *Siredon*, in the lakes of the North-West, are remarkable species of this class of animal life. Leeches infest the streams, especially in the North-West, where they cause much inconvenience to explorers, surveyors, and others who have to travel over swampy ground and through shallow pools.

Insect life is very abundant during the warm season, the butterflies being beautiful in colour, and the beetles remarkable for their markings and brilliant hues. The locust and grasshopper of the Far West, at certain recurring periods, swarm in such myriads as to be a terror to the district they invade. Bred for the most part in the arid central desert, as soon as they obtain their wings they take the course of the wind in their flight, and carry devastation on everything where they settle. Mosquitoes are the chief insect tormentors, but their attacks end with the dry heat of summer, although they are always present in damp places. A large fly, known as "the bulldog," is troublesome, but not abundant, and flying ants are apt to prove very annoying to the traveller over the Western plains.

Space is too limited to give more than a passing notice to the larger animals respectively, and the description is not written for scientific instruction, but simply for general information.

The American panther, cougar, or catamount, corresponds very nearly to the puma of South America. It was known to the early discoverers of the New World as the American lion,

and was formerly abundant, but is fast disappearing bef civilization. It is now heard of only occasionally, and then o when an unusually severe winter deprives it of its prey drives it out of the tangled swamps of the northern solitudes. is a dangerous animal to encounter, and when pursued will t refuge in a tree, whence it is apt to spring upon the hunter his dogs.

The wild cat and lynx are fast disappearing in the older pr inces, but are common in the Far West, especially in the coun bordering on the Peace River.

Foxes are abundant everywhere, the common, or red, being of little value, whilst the cross and silver foxes are hig prized, especially the latter. They are—can an Englishm credit it?—shot or trapped indiscriminately, but there are seve well-organized hunt clubs in the Dominion, with their packs hounds, which carry on the good old English sport. The k nels at Montreal are especially worthy of notice, and the spo man paying them a visit is certain to receive a cordial welco

Wolves in the older provinces are only found on the outski of settlement, but unless met with in packs, in winter, they great cowards. The grey wolf is a strong, powerful animal a very cunning. In the North-West they are found on the prai around the willow thickets and hiding in the long prairie dodgi grass, but are abundant in the great northern forest, where d are to be found. The prairie wolf, or coyotte, is a smaller anim and very cowardly. It is common all through the prairie count where it may be frequently seen in groups on a distant hill t or heard around the camp at night. Its skin makes a use addition to the settler's cabin and is also a handsome trop when dressed as a rug.

Although bears are plentiful in many parts of Canada, th are seldom seen (being nocturnal in their habits) except by t hunters. The black bear, the commonest of the tribe, is perfect harmless, and never attacks man, unless wounded. Its food co sists of berries and larvæ of insects and ants; it plays havoc in field of oats or grain when ripe, in which when feeding it easily shot. Its skin is much sought after, and bear's meat frequently exposed in our markets for sale in winter.

The grizzly bear makes his home in the Rocky Mountain whence he sallies forth on the plains and is the most ferocio



and dangerous of his tribe, being possessed of amazing strength and activity, attaining a weight when full grown of from 700 to 800 pounds. It is unable to climb trees like other bears, and when pursued turns and shows a most determined fight. Great skill is required in the pursuit of this animal, but the danger of the chase renders the sport most exciting. There is a species of bear met with in the barren grounds of the North-West and in the Peace River district known as the Cinnamon bear, very similar to the black bear in habits and size. It is comparatively rare.

The deer family include the most important of our large game animals, of which the Moose is by far the largest, standing as high as a horse. Although becoming more scarce every year, it is yet to be found in the back woods of the older provinces, in sufficient numbers to afford the sportsman all the excitement he wants. Hunting moose is an art, as the long snout and ears of this animal give it most acute powers of hearing and a very fine sense of smell. Its gigantic horns are well known and in constant demand, and its flesh is considered a great delicacy.

The Elk, Stag, or Wapiti, formerly distributed all over Canada, is now extinct in the older provinces, but is found in Southern Manitoba and is yet abundant in the Peace River district, but is fast disappearing with the advance of civilization. Its fine branching horns make a splendid trophy, but they prove a most formidable weapon of defence when the animal is brought to bay.

The Red Deer is abundant, except in old settled districts where no forests are left, and its pursuit affords great sport to the huntsman in autumn. Indiscriminate slaughter, till within the last few years, threatened its extermination, but stringent laws for the observance of the close season are making the deer more plentiful.

The Black-tailed, or Mule deer, is met with in the bush country of the North-West, but is rare and difficult of access.

Deer-shooting in season can be had in almost any part of Canada, provided guides are procured.

The Cariboo, or reindeer, is the fleetest, wildest and most shy of all the deer tribe.

The woodland Cariboo is abundant in Labrador and may be found in considerable numbers in New Brunswick. In the adjoining province of Nova Scotia, their numbers are gradually decreasing, their stronghold now being confined to the Cobequid Mountains and the uplands of Cape Breton. Proceeding west-



wards, it is found in Gaspé and the south-western portions of Quebec, and in the northern districts back of the Ottawa and St. Lawrence rivers, whence it ranges as far as the southern limits of Hudson Bay, where it is succeeded by another species known as the barren ground reindeer, or cariboo. This is a smaller animal, seldom exceeding 150 pounds in weight, whilst large specimens of the woodland cariboo weigh upwards of 400 pounds.

The Mountain Goat is common in the Rocky Mountains above the tree line, but as winter sets in, it comes down to the lower grounds. Its long white wool is silky and beautiful. Professor Macoun speaks of them as being numerous on Mount Selwyn, and agile in jumping from crag to crag. In Bow River Pass they are abundant. This animal must be stalked with great caution, its habits being much like those of the chamois in Switzerland.

The American big-horn, or Rocky Mountain sheep, is confined entirely to the mountain ranges of the far West, where it dwells secure amongst the high cliffs, leaping unscathed from crag to crag. It is exceedingly wary and difficult of approach, and has to be stalked with even more precaution than the stag. The horns on the male are so large at the base that they cover all the upper portion of the head down nearly to a level with the eyes, and the skull is exceedingly strong. The horns and head not unfrequently weigh over 50 pounds.

The Antelope is the fleetest of all Canadian mammals, and when at rest is beautiful and gracefully statuesque. It is essentially a dweller in the open country and is rapidly disappearing before the advance of settlement. It can easily outrun a horse, but after running some time it will stop suddenly and, if the hunter hides, it will return and fall an easy prey. It is sometimes hunted with greyhounds, but more frequently stalked. Great caution and patience are required, as its eyesight is so keen that all the sportman's care is needed to approach it.

The Musk ox is found only in the northern part of the Dominion, stretching from the waters of North Hudson's Bay to the Arctic Ocean. It is the size of a small ox, has very short legs, and yet, is fleet of foot. Its fleece may almost be called double, with long surface hair, under which is close and fine wool. As a robe, the musk ox skin is preferable to that of the buffalo, of which, owing to their increasing scarcity, it is rapidly taking the place.

The Bison, or Buffalo, in former times, was met with from the

bring it back in any abundance. Like the Indian, it retreats
e civilization, and the shrill whistle of the locomotive,
king across the prairie, has sounded the death-knell of the
game of the West.



smaller animals, the sportsman can always find abundance.
e older provinces, squirrel-shooting affords considerable sport,
lack and the grey species being there in good condition.
bbits are also abundant everywhere; but, unlike the English
t, they do not burrow, lying hid under logs and stumps or
nk herbage whence they are started by dogs. In winter they
ge their grey coat to one of white fur, corresponding with
now. This animal is really a hare in its habits, but only the
of an English rabbit. The country, especially in the North-
t, seems alive with them in some years, while in others they
carcely seen.

n the western plains and near the Rocky Mountains, the
rie hare, or jack-rabbit, is found, corresponding closely to the
lish hare and about the same size.

n the older provinces, the Raccoon, which was once very abun-
, is now scarce, and were it not for its nocturnal habits,
ld long ago have become almost extinct. 'Coon hunting with
, on a moonlight night, on the edge of a grain field, where
e animals resort to feed, affords great sport.

the marmot tribe, the ground hog is abundant on the
s of clearings, and on the prairies, gopher and prairie dogs
ery common. The holes made by the latter are a source

The fur-bearing animals are generally regarded as the pecu property of the trappers and Indians, and although steadi sought after, are yet more or less abundant.

The Wolverine is scarce and rapidly disappearing. Its skin a handsome trophy, the animal being the size of a large dog.

The Beaver is only to be found far from man's improvemen but, in the Peace River district, they are yet to be found colonies, and their dams are stated by explorers through th part of the country to be the cause of the excessive floods th occur there. Many small lakes owe their existence to these da

Closely allied to the beaver but widely different in their ha are the musk-rats, common in all ponds, marshes and rivers fr one end of Canada to the other. A very large business is do in musk-rat skins and, although persistently hunted and trapp its great fecundity saves the race from extinction.

The above short sketch of the mammals has been given, as t larger animals generally are more enquired after than sm game. To enumerate the feathered or finny tribe, would fil volume, but it may safely be averred that no country offers greater variety of ducks than Canada.

Swans breed only in the far North, and are seen only wh migrating.

The goose breeds on the northern lakes. Teal are abunda Bitterns are common along the grassy marshes and sedgy ban of the rivers. Heron are not uncommon, and in Manitoba and North-West, pelicans are abundant. Of the grouse, plover, wo cock, snipe and smaller game, due mention will be made in d cribing presently the hunting grounds of the various provinc

The same remarks apply to the fish of the Dominion, th name being legion, and every river, lake and pool teems wi some kind or another which will afford sport either to the troll fly-fisher or angler.

The hunting grounds of the various provinces may now shortly treated of respectively.

Nova Scotia is more celebrated for moose and salmon than th other kinds of game that are found in the sister province Moose are plentiful although constantly hunted, and afford ra sport for British officers quartered at Halifax. The neighbou hood of the chain of lakes between Annapolis and Liverpool, a the Petite and the Garden rivers is claimed as one of the best hun



ing grounds, whilst the Indian guides, necessary for the full enjoyment of sport, know all other likely grounds. Cariboo are found in the Cobequid Mountain district. Grouse are plentiful all through the province, but the finest shooting is woodcock, which are found in great numbers. Snipe are tolerably abundant and salmon, abound in all the rivers, whilst the number of trout will surprise the fisherman unaccustomed to Canadian streams.

The principal attractions of New Brunswick for the sportsman are moose, cariboo, salmon and the St. Croix trout or land-locked salmon. Moose are not nearly as abundant as in former years, and can only be found by parties visiting the province, enlisting an old hunter in their cause. The great Tantamar marsh in the south-eastern part of the province has the reputation of being a splendid snipe ground, while the Restigouche is equally celebrated for the quantity of wild fowl, especially geese, that visit it.

The fishing in the New Brunswick rivers is especially good. The Nipisiguit. Miramichi, Restigouche, St. John, and others afford the salmon fisher glorious sport—a pilgrimage to the Restigouche would afford sufficient material to keep his memory busy for years to come. A well-known American sportsman writes that "the northern countries of the Province that border "on the Bay of Chaleur, afford unquestionably the best field for "sportsmen to be found in America, east of the Rocky Mount-"ains." In the St. Croix and its splendid chain of lakes, trout abound, and are of a kind peculiar to it, known as "land-locked salmon." Whether in reality a different species, or a degenerated salmon is an open question, but they are very gamey, afford first-rate sport, and are excellent eating. Easy of access, and in a beautiful region of the country, St. Croix is a favourite with tourists.

The Province of Quebec affords excellent shooting in many parts; swans, geese, ducks, grouse, woodcock and snipe, moose, cariboo, salmon, and trout are found in abundance in their several localities. The chase of the two former is only pursued during the winter, is hardy and exhilirating, but real, downright hard work, and repays the toil. In the rivers emptying into the River and Gulf of St. Lawrence, the lordly salmon is to be found, and the fly, or any other fishing is simply superb. In the River St. Lawrence are localities noted as the resort of wild swans, geese and ducks, snipe and plover, curlew and sea-fowl of every kind, whilst the forests all through the Province teem

with grouse, and the woodland openings and swampy thick- ets harbour countless woodcock in their season. The large amo- unt of unsettled country in this Province tends to keep up the ab- un- dance of game, in which the more settled portions of Canada are deficient.

The Province of Ontario is of such an extent, and so varied in its different districts that what applies to one portion is perh- aps the opposite of another. Where settlement has advanced, ga- me has disappeared before it, bnt there are large tracts of coun- try yet remaining clothed with the virgin forest, only visited by the lumberman, in which game of all kinds abounds. The Otta- wa district is yet one of these, as well as Nipissing and Musko- ka, although the Canadian Pacific Railway and its connecting li- nes are now opening these regions for settlement, and a few ye- ars hence may class them only as amongst the localities that o- ce held game. Moose are met with on the Dumoine and Coulo- ge rivers, and in the backwoods of the head waters of the Otta- wa river, whilst deer are plentiful; duck and grouse shooting is good, with a fair show of woodcock and snipe, and the wat- ers teem with maskinonge, pickerel and bass. In all the riv- ers tributary to the Ottawa on its north shore, and in the lakes wh- ich lie scattered everywhere in its vicinity, trout are plentiful. In central Ontario, in the old Frontenac or Kingston district, the re is still good sport to be had among the ducks, grouse and sni- pe, though not equal to former years. The country in its rear, bei- ng rocky or marshy, and unsuited for farming, still abounds wi- th deer, and is a favourite hunting ground, especially along t- he Opeongo and Hastings section. At the Thousand Islands, a lo- ng stretch of the St. Lawrence river, unsurpassed for beauty, and a favourite summer resort, splendid trolling is afforded for bass a- nd maskinonge, to say nothing of fishing for smaller fry. Ri- ce Lake, in the rear of Cobourg, and the neighboring lakes are fa- mous for maskinonge and bass and the innumerable quantity of wild ducks that resort there to feed upon the vast fields of wi- ld rice which abound along those waters. The Holland marsh, be- tween Toronto and Collingwood, is famous for snipe, plover, an- d duck. In its vicinity, in years gone by, was one of the famou- s pigeon roosts, or places where the wild pigeons flocked to bree- d in thousands, whence they made their daily incursions into th- e surrounding country for food. This has, however, disappeared

stragglers occasionally return to the roost, but the flocks of pigeons are a thing of the past. In autumn rds are to be found scattered in small flocks along the clearings, feeding on grain fields, but their numbers limited and yearly becoming less. On Lake Erie, int, and Point Pelee, the St. Clair flats, on the western r, and Baptiste Creek, are admirable ducking grounds. oint, averaging eight miles in breadth and projecting enty miles into the lake, with wide fringes of marsh on s, in which wild rice is the chief growth, is controlled o of sportsmen, who keep it strictly preserved, and thus ell stocked with game. Quails have been introduced use on the higher ground, and wild turkeys have, of late en introduced, which are thriving on the ridge of land the length of the Point, crowned with oak, maple, lm, and chestnut trees, affording a splendid cover for le bird. The only localities in Canada, apart from this, e wild turkey yet remains, are in the counties of d Kent, and there they are rare. In the early days of nt, the whole western peninsula of Ontario abounded turkey, and the peculiar growth of the woodlands mparatively free from underbrush, afforded magnificent Proceeding northwards along Lake Huron, along whose urlew, plover, and water-fowl abound, the Manitoulin still afford good shooting and fishing in the waters em. At the Straits of Mackinaw and Sault St. Marie, fishing can be had, the salmon trout of Lakes Huron erior attaining a very large size, whilst all the rivers into the Georgian Bay and Lake Superior teem with l are a favourite resort. Wherever the country is in a nature, the sportsman must rough it and live under

waterfowl literally cover every pond and lake. Successive fl
of these keep sport alive. First, in August, the grey duck
merganser make their appearance, succeeded in Septembe
sea-ducks of every description, and, during these months, g
ducks, and prairie fowls take to the stubble fields, where
ization has reached, and are easily shot. Professor Ma
states that about forty species of game birds are t
seen on the prairie at that season. In Southern M
toba, the elk is yet found in the neighbourhood of M
Mountain (wrongly named), for the moose frequents
country further north, lying between Lakes Manitoba
Winnipeg, and the country west of Lake Manitoba.
the latter, as well as in the waters of Winnipeg, there
large quantities of whitefish of a very large size and sup
quality, and sturgeon of an enormous size are found there, a
the Saskatchewan, and Red rivers. In all the mou
streams of the North-West, which unite to form the S
Saskatchewan, there are multitudes of beautiful trout,
salmon-coloured flesh. To the sportsman and the love
the picturesque there is no place in that portion of Canada
holds out inducements equal to those to be found in the
River district. Hunting or fishing, as he turns his gaze t
west, he will see towering up to the skies, peak over peak
everlasting hills. Should the mountains become tiresome
has only to turn to the east and look over the swelling pr
until in the distance the grassy mounds melt into the lim
horizon. The Peace River district is a great resort for
both black and grizzly, and there is abundance of the l
game also, elk, moose, and deer. All its lakes teem with fi
the very best quality; geese and ducks during their migra
are in countless thousands, an evidence of which is given in
fact of many thousand geese being killed and preserved for
ter use every autumn at the Hudson Bay post, Fort Chippewa
At the same place, no less than 25,000 whitefish are dried e
year for winter use, such as are not required as rations for
men, being fed to the train dogs. The country here is describ
park-like, the undulating plains being dotted with groves of t

Within the Rocky Mountains, besides fishing, hunting the
horn and the Rocky Mountain goat will give exciting sport.
spring and summer the males form separate bands of from t

to twenty, and feed along the edges of glaciers, or rest among the castle-like crags of the high summits. Whether quietly feeding or scaling the wild cliffs, their noble forms and the beauty of their movements never fail to strike the beholder with lively admiration. In the months of November and December, all flock together, male and female, old and young. Wary in the extreme, they are most difficult to approach, and it is only by exercising all the stratagems of a hunter that a shot can be fired at them. Man's incursions in the mountains are making these animals more wary every year, and were it not for the inaccessible places they are able to scale, and the giddy heights they fearlessly tread, where men cannot follow, their days would be soon numbered and they would become like the buffalo, an animal of history.

In British Columbia, the general aspect of the country naturally impresses the sportman that it is a land abounding with game. The rugged mountain ranges are wooded on their slopes and have in their embrace, lakes, swamps and natural meadows ; lakes of all sizes, from the little pond to the body of crystal-like water 100 miles long, often linked by streams, lake after lake turning and twisting to find an outlet to the ocean, generally through one or other of the larger rivers of the province, all abounding with fish. On the low lands and near the coast in the winter the black-tail deer is numerous. This animal frequents the dense coniferous forests of the Pacific coast, delighting in their dark and damp recesses. It is seldom found far from timber or from some thick covert into which it can retreat. To the northward, where it has been but little hunted as yet, it comes down frequently to the salt water to feed on a species of sea weed cast up on the shore, and the Indians kill many, so feeding, by stealing up within shot in their light canoes. Deer are abundant on the islands and among the mountains of this coast, but there are great areas of territory where owing to the thick and tangled character of the undergrowth, stalking is out of the question, because of the impossibility of noiseless progress through the thickets. The elk is abundant on the coast line of the mainland, especially east of the Cascade range. Grouse are found everywhere, both on the mainland and the island, frequenting the thick fern and the pine lands, the willow grouse much resembling the English partridge. Prairie fowl are plentiful in the valleys of the east Cascade region and occasionally the rare game bird, the large sage

hen or "cock of the plains," may be found above Osoyoos. Duc[illegible] geese, snipe, and pigeon are everywhere, the mouth of the Fra[illegible] river especially being a great resort for wild-fowl. The valle[illegible] of the Thompson, Okonagon, and Cache Creek afford good sp[illegible] for the rifle and the gun, and, in the mountain districts, bears m[illegible] be had with the aid of a guide and experienced hunter. T[illegible] Grizzly and Cinnamon bear, with wolves and lynx can be hunt[illegible] but the sport is by no means free from danger, and considera[illegible] roughing must be encountered by the hunter.

Salmon in British Columbia are far more numerous than in t[illegible] Atlantic Provinces of the Dominion, coming up from the sea [illegible] millions: this is no exaggeration. Six species are said to ex[illegible] in the waters of the Pacific Coast, four of which are excelle[illegible] and of great commercial importance.

On the Fraser, the Skeena, and the Bass rivers, large canner[illegible] are located. Trout abound in all the lakes and streams, a[illegible] white-fish are common in the lakes in the middle and Northe[illegible] interior of the provinces. Smelts of two kind are abundant [illegible] the coast, and a delicate fish known as the "Candle fish," [illegible] Oolachan, is very abundant along the coast in spring.

In some portions of the province, the country is open and do[illegible]ted with trees, much like an old world park, and a horseman can canter along at will without underbrush to impede his progress. Snow seldom falls to any depth, except in the mountains, and as a consequence, the game is not driven from its regular grounds, as in many of the other older provinces.

In conclusion, this remark applies universally; that with the advance of settlement, animal life retreats. The western plains, so lately thronged with bands of elk and antelopes and roamed over by countless herds of bison, are yearly required more and more for human pastures, instead of nature's feeding ground. Hills, valley, forest and meadow everywhere are alike coming under man's control, thereby rapidly pushing to the verge of extinction many species of animals which were formerly abundant. But for the true sportsmen, there is yet abundance of game, and the migrations of the wild fowl save them from the universal destruction which threatens quadrupedal life. Canada is easy of access, its hunting grounds are equal to any of those in Europe, and free to all, and for scenery and beauty of landscape, for the grandeur of its forests, the wild solitude of its mountains, and the placid waters of its inland lakes, it stands unrivalled in British America.

ADDENDA.

THE INDIANS.

The reports of the Department of Indian Affairs for 1887 and 1888 show a continuation of the slow changes noted in recent years, by which the Indians are identifying themselves with the civilization of the general population in the older provinces—a process that is expected to follow with the Indians of the North-West and British Columbia, sections of whom are being brought into contact with the whites for the first time. Some of the Indian day schools of the North-West have been converted into boarding schools, the latter being found more successful in changing the Indian boys from their roving and improvident habits to more settled ways; and two new industrial schools have been established there also with fair prospects. The Superintendent of Indian Affairs, in the report of 1888, says, regarding the assimilation of the aboriginal population, which has hitherto been deemed impossible:

"The attainment of this grand end, which will crown all the efforts made for the elevation of the red man, will be greatly facilitated by the extension, more universally to the young, of the improved methods of education, of a literary, industrial, and, where there is sufficient genius displayed to justify it, of a professional character. I may here state that the Indian element is now not by any means without representatives in the learned professions of the country."

The celebrated Six Nation Indians of Ontario have for a number of years past been slowly increasing in numbers, the annual increase being 50 to 100. Their present population is 3,362. The remains of the tribes in Quebec, New-Brunswick and Nova-Scotia also are slightly in the increase.

The total amount to the credit of the Indians under treaty was in June, 1888, $3,324,234, being an increase of $20,370 over 1887. There are now about 200 schools among the Indian population, with 6,127 pupils.

The total Indian population, "resident" and nomadic, is given in 1888, as follows:

	Resident.	Nomadic.	Total.
Ontario	16,903	797	17,700
Quebec	6,731	5,734	12,465
New-Brunswick	1,594	.....	1,594
Nova-Scotia	2,145	.....	2,145
Prince Edward Island	319	....	319
Manitoba and North-West Territory	23,940	10,428	34,368
Unsettled Northern Territories	.....	18,054	18,054
British Columbia	17,922	20,022	37,944
Total	69,554	55,035	124,589

Continuing the statistics on page 50, the returns of 1888 sho that the Indians now have 13,833 dwellings; the land new brought under cultivation in the year was 4,804 acres; cows owne 6,782; oxen 3,385; young stock 10,116, horses 21,130, shee 2,615, pigs 9,077, grain of all kinds 349,186 bushels; potato 260,450 bushels; hay 24,005 tons; value of other industri $863,365.

MILITARY.

Up to the time of confederation the British government held a the fortifications, military lands, etc., in British America, and ha detachments of regular troops in each province. At confederatio all the military property was transferred to the Dominion gover ment, and within two years all the Imperial troops were withdra from the country, except a regiment or two at Halifax. A deta ment there and a naval station at Victoria, B. C., are now the on remnants of the British regular army in Canada. The country h been educated to manage its own defenses by organizing a mili force, supplemented afterwards by what is called the necleus o regular Canadian army. The country is divided into twelve m tary districts under a permanent military staff of officers, with Minister of Militia—who is a cabinet minister—at their head, chief military officer being a major general selected from the Im rial army.

The Active Militia consist, in round numbers, of 37,000 vo teers, citizen soldiers in the truest sense, armed and equipped Government, but paid only for the short periods of annual required by the regulations, or when called out by the Crown the defence of the country from invasion or for the suppressio rebellion, or when ordered out upon written requisition of ma trates (to which they are likewise liable at all times) in aid of civil power. The nominal strength of the Active Militia is 43,

The law provides for the maintenance of a due strength of Ac Militia by ballot, when necessary; but so high has proved military spirit of the people, that the Department has always applications for permission for the organization of Volunteer Co much in excess of the quota required by the Department.

The Reserve Militia consist, as the statute declares, of "t whole of the men who are not serving in the Active Milit

between the ages of 18 and 60, with a few clearly defined exemptions; it comprises therefore the entire able-bodied male population, liable to military service upon emergency, but neither mustered, armed nor drilled. The strength of the Reserve, according to former enrolments, and the census statistics, would now be about 1,000,000 men, whom the law divides into four classes, according to their age and the strength of family claims upon them for support.

The efficiency of the militia is kept up by annual drills of twelve days duration for the various city corps, and biennial drills of twelve days, in camp, for the rural corps. The attendance at these drills varies from 15,000 to 30,000 men, and the camp exercise gives all the experience of active military life. The organization includes all branches of the land service, such as cavalry, field, garrison and mountain artillery, engineers, infantry, etc. There is a Royal Military College at Kingston, founded in 1875, and eight military schools distributed in the different provinces, providing education in the various arms of the service, and also providing a permanent corps which may be called a standing army. Among these are three batteries of artillery holding the citadels at Quebec, Kingston and Victoria. Out of about 125 officers who have graduated at the Royal Military College, 69 now hold commissions in the Imperial army, and thirty in the permanent Canadian forces of the North-West Mounted Police. The last named is a mounted force which patrols portions of Manitoba and the North-West territories, to preserve order in the regions occupied more or less by Indians, and as yet only partially settled. It consists of 1,000 men and officers having a central depot and ten troops or divisions, and maintains good order over a region of territory 700 miles long by 350 miles wide.

With the exception of some small items of accoutrement, all the military clothing and boots and shoes are made in Canadian factories; and the cartridges are also now made by a Canadian factory. The total of the militia expenditure for the year 1888 was $1,273,178, which included construction and repairs of barracks, etc., and the regular grant of $12,000 to the rifle and artillery associations, but did not include items connected with the Northwest Rebellion of 1885. The government grant in pensions to those who were wounded in the war of 1812, in the Fenian raids of 1866, and the North-West rebellion, was $35,869 in 1888. The revenue of

the militia department (sale of stores, ammunition, etc.) in 1888 was $20,719.

There were three principal occasions of calling out the militia since confederation. The first was the anticipated Fenian raid of 1870, when 19, 00 men and twenty guns were called out; the second was the Red River expedition of the same year, for suppressing the first rebellion of Louis Riel, when 750 men performed a rapid march from Ontario to what is now the province of Manitoba. The commander was Col. now Lord Wolseley who here first won his military fame. The last was the second Riel rebellion of 1885. The mode in which, on this occasion, a force of over 5,000 men, placed in motion practically at a moment's notice, was brought together from different and far distant Provinces, and concentrated at a most inclement season, by arduous marches, at points in the most isolated and unsettled regions (adequate commissariat and medical staff arrangements being likewise promptly made), and the good discipline, steady conduct and courage which that force displayed in the campaign, won the admiration of the highest military authorities abroad.

POSTAL.

The following facts are from the report of the Postmaster General, for 1888:—

Number of post offices in operation	7,671
Whole length of mail route, miles	56,264
Aggregate annual mail travel, miles	24,49,188
Length of railway mail route, miles	11,252
No. of letters carried in the year	83,700,000
" post cards in the year	16,586,000
" registered letters in the year	3,580,000
" newspapers sent, besides those from newspaper offices	10,850,000
" samples, circulars, books and patterns	17,810,000
" parcels by parcel post	743,000
" " (closed) for United Kingdom	20,900

The net postal revenue of the year was $2,803,419, but the expenditure $3,533,397; but owing to current changes the actual deficit as the working of the department has been reduced to $566,999 against $854,845 in 1887. The dead letters dealt with in the year were 916,929. Of the registered letters above referred to, only 197 cases were reported of abstraction of contents or loss of letters going through the post, and in only 31 cases were the contents not recovered. Six of these 197 were accidentally destroyed. The fol-

lowing are facts relating to the Money Order branch of the Post Office :—

No. of money order offices	944
" money orders issued	630,968
Amount of orders issued, payable in Canada	$8,520,775
" " " " " other countries	2,395,842
Foreign orders payable in Canada	1,726,011
Revenue from fees and foreign exchange	81,077
Expenditure, salaries, printing, etc	83,309

The accompanying table shows the transactions of the Money Order office with Foreign countries :—

Country.	Issued in Canada.	Payable in Canada.
*United Kingdom	$958,001	$328,674
United States	1,297,734	1,283,094
France	27,077	13,656
†Germany, Denmark, Sweden and Norway	39,797	9,782
Italy	31,478	1,517
Switzerland and Roumania	3,920	2,007
Belgium	7,305	3,812
Newfoundland	22,177	51,482
Jamaica	1,035	18,462
Australasian Colonies and New Zealand	7,318	13,525
Totals	2,395,842	1,726,011

ESTIMATED EXPENDITURE OF 1889.

The following is the estimated expenditure of the Dominion for the financial year, ending 30th June, 1890 :—

Public Debt (including Sinking Fund)	$11,923,442
Charges of Management	184,283
Civil Government	1,316,717
Administration of Justice	698,130
Police	19,000
Penitentiaries	352,859
Legislation	718,980
Arts, Agriculture and Statistics	123,950
Immigration	95,135
Quarantine	68,664
Pensions and Superannuation	328,250
Militia	1,296,800
Railways and Canals (Income)	227,057
Public Works do	1,437,675
Mail subsidies and Steamship Subventions	284,673
Ocean and River Service	213,500
Lighthouse and Coast Service	526,860
Scientific Institutions	62,250
Marine Hospitals, and Sick and Distressed Seamen	51,000
Steamboat inspection	23,000

*Including all those British Possessions and a few foreign countries, between which and Canada there is not a direct Money Order Exchange.

†On the 20th December, 1887, Money Orders on Denmark, Norway and Sweden ceased to be advised through Germany, and on that date commenced to be forwarded through London, England.

Fisheries	$ 381,500
Superintendence of Insurance	9,000
Subsidies to Provinces	4,100,000
Geological Survey	60,000
Indians	1,078,740
North-West Mounted Police	723,426
Miscellaneous	327,410
Collection of Revenue.	
Customs	871,700
Excise	372,351
Culling Timber	54,000
Weights, Measures and Gas	88,550
Inspection of Staples	3,000
Adulteration of Food	25,000
Minor Revenues	4,000
Railways and Canals	4,027,841
Public Works	186,075
Post Office	2,959,710
Dominion Lands	185,748
Liquor License Act	
Total Consolidated Fund	35,410,280
Redemption of Debt	2,417,267
Railways and Canals (Capital)	6,301,340
Public Works do	407.000
Dominion Lands	100,000
Total Capital	9,225,607
Grand Total (omitting cents)	$44,635,887

SALARIES OF GOVERNORS AND MINISTERS.

The following are the present salaries of the Governor General High Commissioner in England, lieutenant governors and cabine ministers :—

The Governor General, £10,000, or	$48,666 66
High Commissioner for Canada in England	10,000 00
Lieut. Governor of the Province of Ontario	10,000 00
do Quebec	10,000 00
do Nova Scotia	9,000 00
do New Brunswick	9,000 00
do Manitoba and Keewatin	10,000 00
do Northwest Territories	7,000 00
do British Columbia	9,000 00
do Prince Edward Island	7,000 00
Thirteen Ministers, 1 at $8,000, 12 at $7,000	92.000 00
Governor General's Secretary	2,400 00
Auditor General	4,000 00
	$228,066 66

A new department of "Trade and Commerce" is proposed fo 1889, thus making 14 ministers. The expenditure last year o Rideau Hall, the governor-general's residence, in maintenance of th

establishment, repairs of furniture, etc., was about $190,000, and his secretary's office establishment, including aides-de-camp, clerks, messenger and orderly were $9,750, with contingencies of $13,000, making the governor general's establishment in round numbers $263,000 per annum.

MARINE.

The report of the department of marine for 1888 shows the following development of the lighthouse service of the Dominion during the past 20 years:—

	Light Stations.	Light Houses.	Fog Horns and Fog Whistles.
1868	198	227	2
1878	427	518	29
1888	569	664	50

These lighthouses burned during the year 116,860 gallons of oil. During the year there were 141 candidates for certificates as masters and mates of sea-going ships, of whom 96 passed; 99 inland and coasting certificates as masters were granted, and 26 as mates.

During eleven months of the year 126 engineer's certificates were issued.

The total casualties reported for the eleven months of the year of all vessels in Canadian waters and of Canadian vessels beyond our own waters was 192, the gross tonnage being 64,063; the damage being $698,889, and the number of lives lost 45. This is less than any year since 1870.

There have been 34 new stations added during the year to the meteorological service. During 9 months of 1888 there were issued 404 warnings of approaching storms, of which 331 were verified. This service, which is increasing in value each year, was organized in 1871 with 46 stations in all and at an expense of $5,000. In 1876 the daily forecasts of weather, known as "probabilities," were first issued. In that year 101 stations in Canada and 6 in Newfoundland reported by telegraph, of which 14 sent reports three times a day. On these reports and on a collection of reports from the United States the daily forecasts were issued. In 1884 a system of train signals was organized, by means of which those in sight of railway trains could know the weather from discs shown on the cars indicating "rain," "fair," etc. There are now 354 stations reporting to the central office at Toronto, the whole cost of the



service being only $55,000. The director of the service is Cha Carpmael, F.R.A.S.

There are 20 life-boat stations maintained by the governm with 10 life-saving canoes, at a cost of about $4,500 a year.

The number of steam vessels added to the Dominion in 1888 83, with a registered tonnage of 5,612 tons. The number of ve on the registry books of Canada at the beginning of 1888 wa follows :—

Provinces.	Number of Vessels.	Steamers	Total Net Tonnage.
New-Brunswick.	1,027	80	255,126
Nova-Scotia.	2,845	84	498,878
Quebec.	1,586	319	189,064
Ontario.	1,275	610	139,548
Prince Edward Island.	225	14	29,031
British Columbia.	149	90	12,789
Manitoba.	71	43	5,811
	7,178	1,240	1,130,247

Canada thus ranks third in the number of vessels and fourt amount of tonnage possessed by the leading countries of the wo being exceeded only by Great Britain, Sweden, Norway and Germa

In the year 1887 the arrivals and clearances of all vessels (ex sive, however, of coasting vessels) at Canadian ports were 57,9 with a total register tonnage of 14,090,998 and freight amoun to 4,486,399 tons weight and 2,975,165 tons measurement. Of the arrivals and departures of Canadian vessels were 30,960 v tonnage of 6,245,632, and freight amounting to 2,100,090 t weight and 1,380,949 tons measurement.

The arrivals and departures of Canadian and British vessel the coasting trade of Canada, in the year 1888, were as follows

	No. Vessels.	Tonnage.
Arrivals, Canadian and British,	50,531	9,644,541
" Foreign,	398	145,265
	50,929	9,789,806
Departures, Canadian and British,	48,805	8,838,598
" Foreign,	382	160,875
	49,187	8,999,403

If the arrivals and clearances of the coasters were included in foregoing figures, the total tonnage of the year would be o 32,000,000.

In a speech before the Toronto Board of Trade in January, 18

the minister of Finance thus referred to the shipping trade of the Dominion:

"While other countries make vessels of commerce pay for lighthouses, since Confederation no vessel has paid light dues in this country. Although 700 lights dot our shores, which have cost the country millions of money, they are as free to the ships of every other country as they are to the ships of Canada herself.

"The volume of foreign trade with Canada last year is a little over $41 per head of its population. You go to the United-States, with its admittedly large trade, and you will find that their foreign trade is only about twenty-three and a-half dollars per head of its population. If you will go into statistics you will find that outside of Great Britain there are only four countries in Europe which have a larger trade per capita than the Dominion of Canada has developed in these twenty years since Confederation. In 1865 the cost per ton per mile to move freight in the United-States was three and three-fiftieths of a cent. In 1887 the cost was one and two-fiftieths of a cent. While in England the cost of moving a ton of freight per mile is about two cents, and in other European countries it is somewhat larger, in Canada it is only ninety-three one-hundredths of a cent per ton per mile."

TRADE AND COMMERCE.

The facts and figures here given are compiled from the Trade and Navigation returns for the year ending June 30th, 1888, and will supplement the information on pages 74, 80.

The total exports, imports, duty collected on the imports, and the total trade for the three years since 1885 are:—

	Total Exports.	Total Imports.	Total trade.	Duty collected on Imports.
1886	$85,251,314	$104.424,561	$189,675,875	$19.448,123
1887	89.515,811	112,892,236	202,408.047	22,469,705
1888	90,203,000	110,894,630	201,097,630	22,209,641

The following table shows the principal countries with which Canada does business, with the value of our imports from and exports to:

Country.	Imports from	Exports to
Great Britain	39,298,721	40,084,984
United States	48,481,848	39.470.209
France	2,244,784	397,773
Germany	3,364,563	198,543
Austria	133,609	4,971
Belgium	488,743	17,057
Denmark	60,753	.....
Greece	148,343	7,804
Holland	331,791	378
Italy	180,726	55,090
Norway and Sweden	8,973	82,613
Portugal	74,576	155,821



Country.	Imports from	Exports to
Russia	12,103	10,164
Spain	374,932	52,317
Australia	43.444	446,019
China	912,228	76.011
Japan	1,216,479	56.437
Brit. West Indies	818.393	1,491,824
Spanish " "	2,434.835	1,026,974
Danish " "	3,086	33,817
Dutch " "	666	.....
French " "	11,683	48,871
British Guiana	182,267	211,711
Argentine Republic	17	693,947
Brazil	681,482	333,271
Central American States	395	52
Chili	2,172	142.249
Mexico	175	36,600
South Africa	133,894	26,407
British East Indies	132,103	1,196
Dutch " "	1,939	....
Madeira	5	16,591
Mauritius	31,549	200
Newfoundland incl. Labrador	421.599	1,524 527
St. Pierre et Miquelon	6,575	230,240
Spanish Possessions in Pac.	256,126	.....
Sandwich Islands	1,299	16,495
Siam	25,044	.....
Switzerland	193,838	1,100
Hayti	8	.....
Turkey (Asiatic)	120,547	526
Venezuela	10,087	.....
New Zealand	700	2,186
Roumania		311
Peru		16,994
Uruguay		70,933
U. S of Columbia		4,880
Gibraltar		704
Hong-Kong		125
French Africa		4,846
Spanish "		11,774
Portuguese "		7,521
Other French Colonies		28,081
Coin and Bullion to U. S.		17,534
Estimated amounts short returned at inland ports to U. S.		3,084,322

The following table shows the imports and exports of e province, the imports being on the basis of goods entered consumption :—

Province.	Imports.	Exports.
Ontario	41,672,432	27,921,223
Quebec	41,449,335	36.931,956
Nova Scotia	7,856,764	8,813.006
New Brunswick	6,058,084	6,929,563
Manitoba	1,750,048	1,304,890
British Columbia	3,404,207	3,928,077
Prince Edward Island	600,066	1,272,429
Northwest Territories	56,164	

IMPORTS, EXPORTS AND TARIFF.

The subjoined table shows the values and quantities of some of the principal articles imported into Canada, with the rate of duty. In cases where the duty is marked "various," it is found impossible to enumerate the different rates of duty for the classes of goods that come under that head, especially where specific and ad valorem duties are combined. In other cases where the items under one head have varying rates of duty, the lowest and highest rate is indicated.

IMPORTS.

	Value.	Rate of Duty.
Ale, Beer and Porter, Galls. 333,206	$183,759	18 cts. per gall. in bottles, 10 cts per gall. in bulk.
Animals [living],	268,400	20 p. c.
Books, Periodicals and other Printed Matter,	1,285,302	Books 15 to 20 p. c.
Brass and Manufactures of,	404,161	10 to 35 p. c.
Bread Stuffs: Arrowroot Biscuits, Rice, Macaroni, etc.,	492,159	Rice 1¼ per lb.
Grain of all kinds, Bushels 2,093,526	931,517	20 p. c.
Flour and Meal of all kinds, Barrels 307,343	958,740	20 p. c.
Bricks and Tiles,	146,910	20 p. c.
Carriages,	348,459	$10 to $15 each and 20 to 35 p. c.
Carpets, N. E. S., Yds. 396,941	76,735	25 p. c.
Cement,	158,303	Raw cement $1 per ton.
Clocks and Clock-springs,	135,032	Clocks 35 p. c., springs 10 p. c.
Coal and Coke (see also Free Goods,) [Tons 2,146,085	7,013,967	Coal 60 cts. per ton, Coke, 50 cts. per ton.
Coffee (see also Free Goods), [lbs. 700,110	104,647	3 cts. p. lb.
Collars, Cuffs and Shirt-Fronts,	122,373	24 cts. per doz. and 30 p.c.
Copper and Manufactures of,	136,418	10 to 30 p. c.
Cordage of all kinds,	75,435	1¼ c. p. lb. and 10 p.c.
Cotton, Manufactures of	5,470,504	12½ to 40 p. c.
Crapes of all kinds,	140,754	20 p. c.
Drugs, Dyes, Chemicals and Medicines,	1,459,130	Various.
Earthenware and China,	750,691	35 p c.
Fancy Goods,	2,060 030	Various.
Fish and Products of, N. E. S. (See also Free Goods),	532,710	Various.
Flax, Hemp and Jute, and Manufactures of,	1,528,099	20 to 30 p. c.
Fruits and nuts dried,	895,669	Raisins 1 ct. p. lb. and 10 per cent.
Do green, (see also Free Goods),	759,854	Various.
Furs and Manufactures of,	754,770	Skins 15 p. c. mfrs. 25 p. c.
Glass and Manufactures of,	1,269,288	20 to 30 p. c.
Gloves and Mitts—all materials except leather,	399,333	30 p. c.
Gold and Silver, Manufactures of,	279,839	30 p. c.
Gunpowder and other Explosives,	147,855	Powder 3 to 15 cts. p. lb.
Gutta Percha and Indian Rubber Manufrs.	807,540	25 p. c.
Hats, Caps and Bonnets,	1,291,626	25 p. c.



		Value.	Rate of Duty.
Iron and Steel, and Manufrs. of,		$9.746,666	Various.
Jewelry,		551,244	20 p. c.
Lead and Manufrs. of,		245.911	Pig and Scrap,40 c. p.
Leather and Manufactures of,		1,672,512	10 to 35 p. c.
Marble and Manufactures of,		102,865	10 to 35 p. c.
Metal Composition, etc., N. E. S.,		348,964	10 to 35 p. c.
Musical Instruments,		472,025	Various.
Oils,—Coal and Kerosene and Products of,	Galls. 4.785 598	532,237	7⅛ cts. p. gal.
Oils,—all other,	" 1,773,290	694.643	20 to 30 p. c.
Oil Cloth,		290,487	5c. p. yd. and 15 to 20
Paints and Colors,		552.549	10 to 25 p. c.
Paper and Manufactures of,		1,216,795	5 to 35 p. c.
Pickles and Sauces,		155,807	25 to 40 cts p. gal.
Plants and Trees (see also Free Goods,)		82,410	20 to 25 p. c.
Printing Presses,		91,174	10 p. c.
Provisions, viz. : Butter, Cheese, Lard and Meats,		1,187,108	Butter 4c., cheese 3c., la 2 cts. p. lb.
Salt (see also Free Goods),	lbs 10 413,258	35.670	10 to 15 p. c.
Seeds and Roots (see also Free Goods),		413 792	15 to 20 p. c
Silk and Manufactures of,		2,888,303	15 to 30 p. c.
Soap of all kinds,		97,679	2 to 10 cts. p. lb. and to 20 p. c.
Spices of all kinds,		198,946	10 to 25 p. c.
Spirits and Wines,	Galls. 1.207,284	1,198,570	$1.75 to $2 p. gal.
Sugar of all kinds	lbs. 200,466,072	4.862.042	Refined 1½c. p. lb. a 35 p. c.
Molasses,	Galls. 3,245,349	594.396	$1 to $1.93⅓ cwt.
Sugar Candy and Confectionery,	lbs. 671,328	92,032	1¼c. p. lb. and 35 p. c
Tea (see also Free Goods),	lbs. 534,870	88.011	10c. p. lb.
Tin and Manufactures of,		146,340	Crystals 20 p. c. man factures 25 p. c.
Tobacco and Manufs. of,	lbs. 347,073	399.862	Raw 20c. p. lb. man factures 25 to 35 p.
Turpentine Spts. of,	Galls. 430,859	173.002	10 p. c.
Varnish,	Galls. 54,237	113.131	20c. p. gal. and 25 p. c
Watches and parts of,		443,385	Watches 25 p. c., mo ments 10 p. c.
Wood and Manufactures of,		1,149,324	15 to 35 p. c.
Woolen Manufactures,		11,814.519	Various (10 to 40 p. c.

FREE GOODS.

MINERALS :—		
Coal, anthracite,	Tons 150,383	$624,720
Ores,		10.633
Precious stones in rough state,		247.358
Salt,	lbs. 203,042.332	285 455
Fish, all kinds, N. E. S.,		273,085
Fish oil,	galls. 136.528	62,629
WOOD PRODUCTS :—		
Bark,		35,575
Corkwood,		12,597
Ivory nuts,		33,595

Logs and round timber, N. E. S.,	$336,886
Lumber, rough,	491,890

ANIMALS AND THEIR PRODUCE:

Animals for improvement of stock for settlers,		872,647
Bristles	lbs. 88,614	72,731
Eggs,	Doz. 407,581	65 262
Fur skins not dressed,		478,149
Grease,	lbs. 2,466,415	100,534
Hides and skins, undressed,		1,961,134
Silk, raw,	lbs. 33,771	143,521
Wool, raw,	lbs. 12,737,254	1,875,651

AGRICULTURAL PRODUCTS:

Broom corn,	$133,392
Cotton, raw (including cotton waste), lbs. 33,227,256	3,081,424
Fibre, mexican, fibrilla, etc,	38,543
Hemp, undressed,	535,759
Tobacco leaf, raw, lbs. 11-489,771,	1,305,576

MANUFACTURED AND PARTLY MANUFACTURED ARTICLES:

Bells for Churches,	33,303
Drugs, dyes, chemicals and medicines,	1,238,790
Duck, for belting and hose,	30,530
Fish hooks, nets, lines and twines,	322,430
Gutta percha, and rubber crude,	398,587
Junk and oakum,	50,382
Brass,	76,470
Copper,	191,454
Iron and Steel,	2,029,004
Tin,	1,040,942
Zinc,	98,557
Oil cake and cotton seed cake and meal,	11,480
Oils, cocoanut and palm, gals. 308,616,	66,259
Rags,	193,025
Resin,	80,360
Articles for use of Government,	670,644
Articles for army, navy and militia,	67,723
Coffee, green, N. E. S.,	184,347
Tea, lbs. 17,997,203,	3,334,816

EXPORTS.

The following are among the leading articles, with their values, exported from Canada, in 1888. These are all the produce of Canada, and do not include articles which though exported hence are not produced or manufactured in the country.

MINERALS.

Asbestos,	tons 3,428	$228,355	Ore, antimony,	tons 411	$ 10,777
Coal,	tons 563,341	1,730,466	" iron,	tons 13,544	39,945
Copper ore,	tons 1,509	95,585	" lead,	tons 10	724
Copper fine, lbs. 1,018,000		50,900	" manganese,	tons 1,407	24,760
Gold bearing quartz,		810,352	" silver,	tons 543	299,420
Gypsum, crude,	tons 124,515	133,238	Phosphates,	tons 21,849	397,493
" manufr'd ground,		13,230	Plumbago,	cwt. 2,314	1,025
Mica,	lbs. 6,506	6,884	Salt,	bush. 131,580	10,044
" ground,	lbs. 278,995	1,883	Marble and stone,		64,886
Oil, mineral,	gals. 455,501	66,834			

THE FISHERIES.

Codfish, haddock, ling and pollock, fresh,		$ 3,173	Oysters,	1,628
" salted,	cwt. 789,200	3,115,275	Lobsters, fresh. brls. 30,039	109,024
" tongues and sounds,		13,907	" canned,	1,220,523
Mackerel, fresh,	lbs. 1,407,193	41,213	Salmon, fresh, lbs. 1,509,509	165,876
" canned and pickled,		588,814	" canned and pickled,	988,536
			Other fresh fish,	578,195

Halibut, fresh, lbs. 235,400	$11,086	Fish oil, cod,	$23,443
Herring, fresh or frozen,	204,082	" " seal,	6,508
" pickled and canned,	299,054	" " whale,	4,442
" smoked, lbs. 6,301,854	112,168	" " other,	6,848

THE FOREST.

Ashes, pot, pearl, etc.,	159,026	Masts and spars,	16,055
Bark for tanning,	246,568	Shingles,	311,193
Firewood, cords 156,726	338,002	Sleepers and railroad ties,	519,918
Hop, telegraph and other poles,	147,500	Stave bolts,	118,701
Logs, all kinds,	390,859	Shooks,	243,256
Lumber, all kinds,	16,167,402	Timber, square,	2,384,037

ANIMALS AND THEIR PRODUCE.

Horses,	20,397	2,458,231	Hides, horns and skins,		552,383
Cattle,	100,747	5,012,713	Bacon, lbs.	6,701,860	629,324
Swine,	1,583	5,277	Beef, lbs.	550,630	24,095
Sheep,	395,074	1,276,046	Hams, lbs.	317,963	30,691
Poultry,		127,043	Mutton, lbs.	493,089	27,816
Butter, lbs.	4,415,381	798,673	Pork, lbs.	294,140	19,577
Cheese, lbs.	84,173,267	8,928,242	Canned and other Meats,		308,168
Eggs, Doz.	14,170,859	2,122,823	Sheep pelts,		20,776
Furs, dressed,		80,676	Wool, lbs.	954,975	223,266
Furs, undressed,		1,987,525			

AGRICULTURAL PRODUCTS.

Bran,		49,655	Meal, Indian, oat and other, barrels	26,659	103,544
Flax. cwt.	10,325	80,207	Hay, tons	93,269	903,329
Fruit, green,		857,995	Malt, bush.	193,465	154,145
Barley, bush.	9,370,158	6,494,416	Maple sugar, lbs	200,472	18,597
Beans, "	66,768	124,795	Potatoes, bsh.	2,694,730	1,050,495
Oats, "	566,721	185,010	Seeds,		162,939
Peas, "	2,164,069	1,532,445	Straw,		14,481
Wheat, "	2,163,754	1,886,470	Vegetables,		98,751
Flour, barrels	350,115	1,580,019			

MANUFACTURES.

Agricultural Implements	155,219	Furs,	411,314
Book, pamphlets, maps, etc,	71,786	Fruits, dried,	10,564
Biscuits,	10,266	Grindstones,	31,974
Carriages, carts, etc.	17,690	Iron, stoves and castings,	24,478
Clothing and apparel,	50,340	" machinery, N. E. S.,	110,451
Cordage, ropes and twine,	45,552	" sewing machines,	50,002
Cottons,	75,173	" hardware, etc.,	100,304
Cotton waste,	30,121	Steel Manufactures,	96,504
Extract hemlock bark,	158,403	Oil cake,	75,374
Leather manufactures :		Ships sold to other countries,	289,969
Sole and upper,	299,558	Soap,	17,157
Boots and shoes,	66,038	Starch,	15,664
Harness and saddlery.	3,581	Stone and marble,	18,886
Other leather mfrs.,	87,139	Tobacco mfrs.,	26,770
Lime and Cement,	101,547	Wood manufactures :	
Liquors,	16,393	Barrels,	18,205
Whiskey,	817	Household furniture,	187,398
Musical instruments :		Other wood manufactures,	447,097
Organs,	253,038	Woolen manufactures,	44,895
Pianos etc.,	18,386		

The following table shows the totalexports of the leading Canadian products for 1888:—

Products of the mine	$ 4.110,937
" " fisheries	7,793,183
" " forest	21,302,814
Animals and their produce	24,719,297
Agricultural products	15,436,360
Manufactures	4,161,282

The total duties paid in 1888 amounted to 20.03 per cent. of the total value of goods imported in the year, and amounted to $4.49 per head of the population. The expenses of collecting this revenue amounted to 3.81 per cent. of the revenue collected.

MINERAL PRODUCTION.

The value of the total mineral production (exports and home consumption) of Canada, in 1887, was estimated by Mr. Eugene Coste, engineer of the geological survey, at about $15,000,000, the principal items being as follows :—

Name and Product.	Quantity.	Value.
Antimony ore ..... tons	584	$ 10.860
Arsenic ..... "	30	1.200
Asbestos ..... "	4,619	226,976
Baryta ..... "	400	2,400
*Bricks ..... thousands	181,581	986,689
*Building stone ..... cub. yds	262,592	552,267
Cement ..... bbls.	69,843	81,909
Charcoal ..... bush.	1,610,900	88,823
Chromic iron ore ..... tons	38	570
Coal ..... "	2,368,891	4,758,590
Coke ..... "	40,428	135.951
Copper ..... lbs.	3,260,424	342,345
*Fertilizer ..... tons	498	25,913
*Flagstone ..... sq. ft.	116,000	11,600
Gold ..... ozs.	66,270	1,178,637
Granite ..... tons	21,217	142,506
Graphite ..... "	300	2,400
Grindstone ..... "	5,292	64,008
Gypsum ..... "	154.008	157,277
*Iron ..... "	31,527	1,087,728
Iron ore ..... "	76,330	146,197
Lead (fine, contained in ore). lbs.	204,800	9,216
*Lime ..... bush.	2,269,087	394,859
Limestone for iron flux .... tons	17,171	17,500
Manganese ore ..... "	1,245	43,658
*Marble and serpentine .... "	242	6,224
Mica ..... lbs.	22,083	29,816
*Mineral paint ..... tons	100	1,500
*Miscellaneous clay products		182,150
*Moulding sand ..... tons	160	800
Ochre ..... "	385	2,233
Petroleum (*a*) (bbls. of 35 imp. gals)	763,933	595,868
Phosphate ..... tons	23,690	319,815

Name and Product.	Quantity.	Value.
Pig iron.....tons	24,827	$ 366,192
Platinum.....ozs.	1,400	5,600
Pyrites.....tons	38,043	171,194
Salt..... "	60,173	166,394
Silver.....		349,330
Slates.....tons	7,357	89,000
Soapstone..... "	100	800
Steel..... "	7,326	331,199
Sulphuric acid.....lbs.	5,476,950	70,609
*Tiles.....thousands	14,658	230,068
Whiting.....tons	75	600
Estimated value of mineral products not returned..	abt.	1,610,499
Total.....	abt.	$15,000,000

*Incomplete.

LIVE STOCK TRADE.

The total importation, in 1888, of live stock into Canada, chiefly for the improvement of breeds, was as follows :

Head of horses, 846, cattle 454, sheep 30,626, swine 2,468.

The exports of Canadian cattle, in the last three years, were as follows :

	Horses.	Cattle.	Sheep.
1886	16,951	92,661	359,488
1887	19,081	116,490	488,628
1888	20,397	100,747	395,074

The value of the horses shipped in 1888, was $2,458,231, of the cattle $5,012,713, and of the sheep $1,276,046. The Canadian cattle have hitherto been remarkably free from disease, and are the only cattle admitted into England against which the quarantine regulations of that country have not been imposed.

PUBLIC WORKS.

The following works are under control of the department of Public Works : public buildings, harbors and piers, works on navigable rivers, dredging, roads and bridges, slides and booms, and telegraphs. The amount spent in such works, in 1887, was $7,146,794.

Among buildings under construction for the use of the federal government at Ottawa, are the new Departmental Buildings, opposite the House of Commons, on Wellington street, to cost $750,000 and the new Printing Bureau, on the government reserve, Nepean Point, to be finished about the end of 1889, at a cost of $265,000 including plant.

One of the most important public works in progress is the deepening of the ship channel of the St. Lawrence, between Montreal and Quebec, from its present depth of 25 feet to 27½ feet.

From a statement of this department, it appears that out of 50 leading Canadian ports, 20 are open to navigation throughout the whole year.

In the year 1868, the first year after Confederation, the total amount spent on public works was $812,907. From the year 1875, however, the average has been about $8,000,000 a year, except in the years 1883–84–85, when, owing to the subsidies voted to the Canadian Pacific Railway, it averaged $16,000,000 a year, for the three years. The total spent on public works, from 1868 up to the end of the official year 1887, was as follows :

Canals	$ 31,660,498
Railways	100,326,856
Other Public Works	29,876,963
Total	$161,864,317

The Parliament Houses and the Departmental Buildings, at Ottawa, cost over $4,000,000 for construction, and $1,825,000 for repairs and alterations, exclusive of the Departmental Buildings and Printing Bureau, now under construction.

In the last five years, the Public Works department have built some 70 new wharves and breakwaters, have repaired 130, have dredged and improved the channels of eighty rivers and harbors, and have built about 100 public buildings in various cities and towns.

RAILWAYS AND CANALS.

At the beginning of 1888, there were, inclusive of the government railways, 12,332 miles of completed railway in Canada, of which 11,157 miles were laid with steel rails. The capital paid,—including Government bonuses, $129,810,633, loans $20,592,026, subscriptions to shares $800,000, and aid given by municipalities $12,812,836,—amounted to $683,773,191. The gross earnings amounted to $38,842,010, an increase of nearly $5,500,000; the working expenses being $27,624,683, leaving the net earnings of the year $11,217,327. The number of passengers carried was 10,698,638, and the freight transported over these roads amounted to 16,356,335 tons. The miles run by trains were 33,638,748. The

total number of passengers killed was 10, death in all cases being due to their own carelessness.

The total mileage of the government railways, which consist of the Intercolonial and its branches, the eastern extension railway, the Windsor branch, and Prince Edward Island Railway, was 1,217 miles. The expenditure for the year was $3,276,441, and the earnings were $2,912,783, leaving a deficit of $363,658. It may be explained that in order to promote interprovincial trade, the freight rates on the Intercolonial railway are fixed at a much lower rate than would be the case if the road were a private enterprise. The earnings for the year, in passenger traffic were $845,041, in freight $1,909,842, mails and sundries $157,900, showing an increase of $316,774 over the previous year. The train mileage of the year was 4,939,252 miles. The working expenses per mile run by engines was 55.19 cts. and by trains 66.33 cts; expenses per mile of railway $3,723.23. Total passengers carried 996,194 (an increase of 56,050 over 1887), total tons of freight 1,275,995.

The subsidies granted by the Dominion Government to new railways from 1883 to the end of 1888 amounted to $5,563,138, the number of companies to whom payments were made being 37. The subsidies to the Canadian Pacific Railway are not included in these figures.

The tolls collected in the various canals in 1888 were $300,016, of which $154,332 were from the Welland canal. The other receipts were: wharfage and storage $4,382, fines and damages $641, hydraulic rents, $30,893, other receipts $15,261; total $351,193.

The present total length of canal is 104⅓ miles. Among the canals under construction or finished within the past three years is the Tay canal, connecting Lake Rideau with the river Tay, and affording communication to the town of Perth, a distance of 6 miles; the Murray canal 9½ miles long in all, connecting the head waters of the Bay of Quinte with Lake Ontario; the Sault Ste Marie canal, affording navigation between Lakes Huron and Superior on the Canadian side of the River St. Mary, and sections of the proposed Trent Valley system. The first named is finished, the second to be opened in 1889, and the third in course of construction, to be finished in May, 1892, and the last is also under construction in parts. The Sault Ste Marie canal will overcome a difference of 18 feet in the levels of the two lakes, and will be done by a single lock 600 feet long and 85 feet wide. The gates will be worked by hydraulic

power, and the canal will be crossed by a railway bridge uniting the American and Canadian railway systems.

With regard to the Trent Valley canal system, referred to on page 99, a special report is being submitted to parliament on the subject of carrying out the works, which with the stretches of river and lake navigation already available would give a continuous channel 235 miles long. By thus joining Lake Ontario and Georgian Bay, a distance of about 400 miles would be saved in bringing the water-borne products of the Canadian and American west to the sea ports. Of this distance, works are already completed between Lakefield and Balsam Lake, which afford continuous navigation for 160 miles, with a considerable stretch of territory on either side provided by the tributary rivers and lakes. The total amount expended on the construction and maintenance of the canals from their beginning to the end of June, 1888, was $52,428,763. The amount expended last year was $1,033,207.

FINANCIAL.

In the return of the Public Accounts for the year ending June, 1888, Mr. J. M. Courtney, deputy minister of Finance, gives the following facts regarding the finances of the Dominion:—

During the year there has been received on account of Dominion Lands $217,083.07; the investments on account of the Sinking Funds amounted to $1,939,077.79; amount of debt redeemed $3,185,638.09. The amount at the credit of the Saving Bank depositors was increased by $538,782.86 during the year, making the total deposits on the 30th June last $41,371,058.23. The circulation of Dominion Notes advanced from $15,059,836.06 in 1887 to $16,,249,318.53 on the 30th June last, an increase of $1,189,482.47. The net Debt of the Dominion shows an addition of $7,216,582.72, and on the 30th June stood at $234,531,358.16, the increase almost entirely arising from the relief granted the Harbor Commissioners of Quebec and Montreal, and from the capital sums expended on Public Works and Railways. A still further reduction has taken place in the rate of interest paid on the gross debt; the rate at Confederation was $4.64, in 1887 $3.54, and for the past year $3.45.

Since the last session of Parliament, the Government through the High Commissioner, succeeded in placing a 3 per cent. loan of £4,000,000 in the London market. The average rate realized attained the high figure of £59 1s. This is the first 3 per cent. loan

placed in the English market by any British colony, and proved very satisfactory, both as regards the rate received and the amount tendered for, the total subscriptions reaching £12,000,000 sterling. Owing to this loan, a portion of which was paid in before the 30th June last, the funded debt payable in England has been increased, and at that date amounted to $176,601,775.89. The Sinking Funds on the other hand have increased from $19,054,576.60 to $20,993,654.39.

The cost of the management of the Finance Department for the year, including contingencies, was $72,886.69, a sum more than covered by the profits received on the silver and copper coined during the same period, the profits thereon being $75,826.08.

During 1888 twenty-eight new joint stock companies were incorporated under Dominion charters, with a total capital of $2,211,800; seven old companies applied to increase their capital by an aggregate of $1,094,000, and two companies applied to decrease their capital by $130,000.

THE BANKS.

The subjoined figures are from the statements rendered by the various chartered banks of Canada to the Department of Finance on the 31st January, 1889. There are 212 incorporated, banks in Canada, of which there are 11 in Ontario, 15 in Quebec, 8 in Nova Scotia, 3 in New Brunswick, 3 in Prince Edward Island, 1 in Manitoba and 1 in British Columbia.

	Authorized Capital.	Paid up Capital.	Reserve Fund.
Ontario	21,250,000	17,784,826	5,415,000
Quebec	36,966,666	34,421,232	11,709,565
Nova Scotia	6,130,000	4,521,372	985,000
New Brunswick	700,000	700,000	405,000
Manitoba	1,000,000	364,150	25,000
British Columbia	9,733,333	2,433,333	511,000
Total	75,799,999	60,224,913	19,080,565

Total Assets	251,015,121	Total Specie	7,629,835
" Liabilities	171,846,114	" Loans and discounts to corporations and the public.	178,529,089
" Deposits	134,459,856		
" Notes in circulation	31,592,373		

IMMIGRATION.

Carrying down to 1888 the statistics of immigration on pages 44, 46, we find that in 1886 the number of immigrants who settled in Canada were 69,152, the value of effects brought in being estimated at $3,455,576, cost to Canada $300,920; the figures for 1887 being

84,526 immigrants, and value of effects $3,879,908, cost to Canada $313,773. In 1888 the immigrant settlers were 88,766; value of effects $3,774,455; cost to Canada $226,401.

No assisted passages have been granted by the Government since April, 1887. The average cost for 1888 of each immigrant (including the arrivals reported through the customs) was estimated at $2.55.

The arrivals reported at Quebec during 1888 give the reader a a fair idea of the different nationalities that come to Canada. Out of a total of 28,530 at that port, the following peoples were represented:—

English	13,211	Icelandic	686
Irish	1,809	Russian	169
Scotch	3,752	Roumanian	9
German	403	Austrian	162
Scandinavian	8,038	Italian	15
French & Belgian	255	Other nations	21

In 1888, 85,708 other immigrants landed in Canada bound for places in the United States. The number of such was about 5,000 less than in 1887.

PATENTS.

The number of patents issued in Canada has increased largely during recent years. In 1868 the number granted was 546, in 1878 it was 1,172, and in 1888 it was 2,257. In 1878 the number of certificates of patents issued was 96 and in 1888, 282. The following were the nationalities of those to whom patents were granted in 1888; Canadian 565, English 152, Americans 1,425, French 21, German 33, other countries 61. Of the 2,257 granted, 2,183 were for five years, 7 were for ten years, and 67 for fifteen years. The limit or duration of a patent in Canada is fifteen years, but this may be reduced to ten or five on payment of a proportionate fee. The cost of obtaining a patent, including patent agent's fees, varies from $30 to $40. An article of manufacture, to secure the protection of the act, must be manufactured in Canada within two years of the date of the patent. The Canadian patent law is, in the main, similar to that of the United States. In connection with the patent office at Ottawa, there is a "Model Museum" which is growing to be an interesting institution. The patent office, which is a branch of the Department of Agriculture, now publishes a monthly Journal, giving a technical description and illustration of each new patent granted. A new feature of this Journal is a list of the

TRADE MARKS AND COPYRIGHTS

Issued each month. In this branch, which is under the patent office, there were issued in 1888, 566 registrations of copyrights and 167 certificates of copyrights, 39 of interim copyrights, besides 18 certificates, 7 of temporary copyrights, 288 registrations of trade marks, 71 of industrial designs, and 29 of timber marks.

The fees received in each branch in 1888 were as follows:

Patent Branch.		Copyright and Trade Mark.	
Patents	$60,436 78	Trade marks	$7,961 90
Assignments	2,562 22	Copyrights	653 48
Caveats	1,257 40	Designs	387 00
Copies	971 98	Timber marks	66 —
Sundries	18 13	Assignments	113 73
		Copies	80 75
Total	65,246 51	Total	9,262 86

CRIMINAL STATISTICS.

There are five penitentiaries in the Dominion, and on the 30th June, 1888, the number of convicts confined in these institutions was 1,094, being 65 less than in the previous year. The total number of committals in 1887 was 351, in 1888 360, an increase of 9. The total discharges in 1887 were 392, and in 1888 425. Though, therefore, the falling off in the total convicts was largely due to an excess of discharges, the fact remains that the convict population has for the past few years been diminishing, the actual average having gradually declined in the last five years in every penitentiary except one.

"It is an evidence," says the inspector of penitentiaries, "of the general prosperity of the Dominion, because, in times of depression and financial stringency, it is found that the percentage of criminals who reach the penitentiaries, to the general population, is considerably larger than when labor, industry and enterprise are successful, and plentiful crops reward the toil of the husbandman."

The first official report on the criminal statistics of Canada was submitted by the Department of Agriculture in 1888. The statistics were for the year 1886. From them we make the following summary of the number of offences with the total number of inhabitants to each offender.

	Offences	No. inhab. to each offender.
Murder, attempt at and manslaughter	62	76,382
Rape, and other offences against women	176	26,907

	Offences	No. inhab. to each offender.
Offences against the person	5,365	883
Robbery, burglaries and housebreaking	405	11,693
Horse, cattle and sheep stealing	56	84.566
Other offences against property	4,100	1,155
Other felonies and misdemeanors	132	35,876
Breaches of municipal laws and minor offences	14,410	329
Drunkenness	11,156	429
Total offences	35,862	132

Public Lands.

The report of the Department of the Interior for 1888 shows the sales and pre-emptions of public lands and the area of homestead lands taken up in the last two years:—

	1887.	1888.
Homesteads	319,500 acres	420,333 acres
Pre-emptions	87,747 "	70,522 "
Sales	114,544 "	197,140 "

The following were the revenues derived therefrom:—

	Homest'd and Pre-emption Fees.	Ordinary Sales Cash	Sales Scrip.	Sales to Colonization Companies.	Totals
1887	$26 501 93	48.175.76	337.640 19	.....	412,317
1888	28,521 00	52,238 36	313.522 67	10,000 00	404,282

The report shows that the revenue from Timber lands, mineral lands and grazing lands was $121,747, an increase of $332 over 1887. Of this the timber dues were $91,853, an increase of $12,046 over 1887. The receipts from minerals other than coal were only $430, but the receipts from coal lands were $74,700, an increase of $67,050 over the previous year. The deficiency was on grazing lands which showed a falling off of $13,328. The department estimated the live stock in the North West Territories to be as follows: cattle 108,361, horses 23,868, sheep 31,435.

This department, which has charge of the surveys, has inaugurated improvements in the shape of illustrations to accompany the surveyor's reports, and of a system of photographic surveying in mountain regions, such as has been in use by the Italian army in surveying the Alps.

A National Art Gallery of Canada, the nucleus of which was formed in 1882, has been established under government auspices at Ottawa, and was last year visited by 16,593 visitors. It is yearly receiving many donations of works of art.

The following table shows the annual consumption per head, a excise revenue per head, in Canada, of spirits, beer, wine and tob co in 1888:—

	Spirits	Beer	Wine	Tobacco
Consumption per head gals.	.645	3.247	094	lbs. 2.093
Revenue per head	94cts.	11cts.	06cts	5octs.

The consumption of spirits and wine is largely diminished fr previous years, the following being the average of 21 years pa spirits 1.199 gals., beer 2.605 gals., wine .145 gals., tobacco 2.114 l

The total quantity of spirits produced in 1888 was 5,514,589 g lons, for the making of which there were required 94,243,866 lbs. grain and 90,499 lbs. molasses. The quantity actually manufactu in the year was the largest in five years past, being over one million g lons more than the average of these years. The decrease above no in the home consumption is largely due to the recent increase in t excise duty of from $1 to $1.30 per gallon. Reducing all spiritu and malt liquors to the basis of alcohol, the total consumption head in Canada is only about one-third the rate per head throu out Europe. The actual quantities of these excisable goods tak for consumption in the year were reported as follows: spirits 2,40 716 gallons, malt liquors 15,944,002 (malt consumed 48,640,467 lbs number of cigars 90,783,558, tobacco 9,248,033 lbs.

THE PIANO AND ORGAN TRADE OF CANADA.

Perhaps no better test of the mental cultivation of the Canadia people and their high attainments in the more artistic departmen of manufacture can be found than in the character of the pian now produced in the Dominion. A country that can produce piano at all must be allowed to have a fair share of artistic talen but when we state that a country so young in national life as Ca ada now manufactures its pianos and organs, not only for the great part of its large home demand but for shipment to foreign countrie we give in one fact a volume of evidence as to the position of th country in the scale of civilization. During the last ten or fiftee years organs of Canadian make have found their way, chiefl through Great Britain, to every continent and the export pianos now seems likely to develop in the same way, as both classe of instruments stand critical comparison with the best made in a countries which have had the prestige of a cultivated musical tas



...nt annual value of the product $1,400,000. As an example of progress of the organ trade, it may be mentioned that one firm, ...h started some years ago, making at the rate of one organ per ...th, now manufactures 600 highly finished organs per month, a ...e portion finding their way to foreign countries.

COTTON MILLS OF CANADA.

The following is a list of the cotton mills of Canada* existing on 1st Jan., 1889, with their capacity in spindles and looms :—

	Mills.	Looms.	Spindles.
New Brunswick	5	2,161	89,000
Nova Scotia	3	768	35,500
Ontario	10	3,465	159,900
Quebec	7	4,888	235,300
Grand Total	25	11,282	519,700

...he full weaving capacity of these mills is about 138,000,000 sq. ...ls per annum, and the actual production varies from 100,000,000 ...20,000,000 yds. The total consumption of cottons (home manufactured and foreign goods) per head of population is 30 to 35 ...s, that of the United States being estimated at 45 yds. per head ...annum.

...recent feature of Canadian cotton manufacturing is the export ...ey cottons to China, the amount shipped for the year ending ...1st, 1889, being 2,009,974 lbs. or about 6,533,000 yds., the ...nents in 1887, which was the first year of their export, being ...2,205 lbs. These figures are from returns furnished by the ... Pacific Railway.

pets, rugs and mats, their total capacity being 187 hand looms and 44 power looms. This does not include the hand loom weavers, of whom there are 109 in Ontario and many in Quebec and the other provinces. There are three factories engaged in making hair cloth, the total capacity being 65 looms.

The following are the statistics, partly estimated, of the Canadian woolen mills :—

	Sets of Cards.	Looms.	Spind'es.
British Columbia	1	5	400
Manitoba	2	5	480
New Brunswick	64	134	5,500
Nova Scotia	76	222	9,520
Ontario	655	2.461	144,220
Prince Edward Island	27	70	3,360
Quebec	304	861	37,760
	1,129	3,758	201,240

	Knitting Machines.
New Brunswick	50
Nova Scotia	49
Ontario	1,191
Pr. Edward Island	12
Quebec	661
	1,963

In the foregoing table a custom carding machine is counted, for convenience, as a set of cards. Of these custom carding mills there are about 400, but there are many unreported. Under the heading " Knitting Machines " are included both power and hand machines, but of the latter there are thousands used in private families, so that those here given are only an estimate of the hand and power machines used in factories.—From the *Canadian Journal of Fabrics.*

THE DAIRY INTEREST.

In a series of instructive papers on the dairy interest of Canada, Mr. W. H. Lynch, author of " Scientific Dairy Practice," shows that dairy products now form about one-tenth of our total exports, about one-fifth of all our agricultural products, and more than the items of sheep, fruit, bacon, hay, oats, hides, potatoes and wool combined. The exports of cheese increased from less than $2,000,000 in 1872 to $8,928,242 in 1888; but the exports of butter, instead of keeping pace with this record, have fallen off from $3,500,000 to about $1,000,000, owing to causes which Mr. Lynch shows it is quite within

he power of Canadian dairy farmers to remedy. "At one time," he says, "Canadian cheese was exported under an American brand, to give it a better hold upon the English market; to-day it is to be feared that shrewd Americans know too well that American cheese will sell better in England if put upon the market as Canadian. The reputation of Canadian cheese is now second to none, and the success of the Dominion in cheese production has already awakened considerable enquiry as to our methods among our competitors. Both in Denmark, the present butter country *par excellence*, and in Holland, the premier country for milk production and dairy exports, I saw indications of a disposition to study the reasons of Canada's success. Incidentally I might remark that for four years the south-western counties of Scotland have been steadily improving the quality of their cheese under the personal instruction of Canadian cheese makers, who are there introducing the Canadian system. The good judgment of the Canadian cheese makers is well indicated by their temper on the question of the adulteration of cheese. All the plausible arguments to resort to the tempting profits of robbing the milk of its cream, and substituting something cheaper, are always met by a unanimous opposition by our associated cheese makers. The wisdom of this disposition becomes more and more apparent in the ever-improving reputation of our cheese in Great Britain. In a recent official examination of, I think, nearly 300 samples of Canadian cheese in England, not one was found to be adulterated."

INSURANCE.

The following is an abstract of the Life Insurance business of Canada, for the year 1888, compared with 1887.

—	Premiums for Year.	No. of Policies new and taken up.	Amount of Policies new and taken up.	No. of Policies in force at date.	Net amount in Force.	No. of Policies become Claims	Net amount of Policies become Claims.	Claims paid.	Unsettled Claims.	
									Not resisted.	Res'd.
11 Canadian Cos.....	3,163,096	21,516	24,876,259	72,203	114,034,279	548	909,943	949,303	105,905	11,500
16 Brit. Cos.	930,824	2,116	3,985,787	14,734	30,665,465	199	392,872	393,795	101,590	None.
13 Am. Cos.	2,466,298	12,985	12,364,483	46,731	67,724,094	770	1,095,579	1,138,079	56,457	10,000
40										
Grand totals for 1888	6,590,218	36,617	41,226,529	133,668	212,423,838	1517	2,398,394	2,481,177	264,252	21,500
Grand totals for 1887..	6,001,405	29,806	38,008,310	118,113	191,694,270	1292	2,189,283	2,161,528	349,231	22,500
Increase, i; Decrease, d.	i 558,813	i 6,811	i 3,218,219	i 15,555	i 20,729,568	i 225	i 209,111	i 319,649	d84,979	d1,000

AMOUNTS of Life Insurances in force, 1875-1888.

Year.	Canadian Companies.	British Companies.	American Companies.	Total.
	$	$	$	$
1875	21.957,296	19,455,607	43,596,361	85,009,264
1876	24,649,284	18,873,173	40,728,461	84,250,918
1877	26,870,224	19,349,204	39,468,475	85,687,903
1878	28,656,556	20,078,533	36,016,848	84,751,937
1879	33,246,543	19,410,8 9	33,616,330	86,273,702
1880	37,838,518	19,789,863	33,643,745	91,272,126
1881	46,041,591	20,983,092	36,266,249	103,290,932
1882	53,855,051	22,329,368	38,857,629	115,042,048
1883	59,213,609	23,511,712	41,471,554	124,196,875
1884	66,519,958	24,317,172	44,616,596	135,453,726
1885	74,591,139	25,930,272	49,440,735	149,962,146
1886	88,181,859	27,225,607	55,908,230	171,315,696
1887	101,796,754	28,163,329	61,734,187	191,694,270
1888	114,034,279	30,665,465	67,724,094	212,423,838

The above figures are exclusive of the assessment companies, or insurances effected in the various brotherhoods and benefit societies. There were in 1888 four regular assessment companies, of which three were Canadian. The amount they all had in force in 1888 was $27,365,441, in 1887 $25,255,613; total amount paid in by members in 1888, $367,740; in 1887, $296,698; number of certificates that became claims in 1888, 118; in 1887, 94; net amount of such claims in 1888 $250,559, in 1887 $178,615; amount of claims resisted in 1888 $15,787, in 1887 $7,793,

The following is an abstract of the Fire Insurance in Canada for the year 1888, compared with 1887.

Com	Net Cash received for Premiums.	Re-insurance, Return Premiums, etc.	Gross Cash received for Premiums.	Gross Amount of Polices, New and Renewed.	Net Amount at Risk at Date.	Net Amount of Losses in curred during the year.	Net Amount Paid for Losses.	Unsettled Claims. Not Resisted.	Unsettled Claims. Resisted.
	$	$	$	$	$	$	$	$	$
6 Canadian Companies	1,137,247	284,492	1,421,739	120,158,592	159,070,684	733,582	744,743	81,552	5,500
21 British Companies	3,856,771	546,140	4,402,911	376,403,322	433,676,560	2,054,790	2,102,631	129,158	41,472
5 American Companies	445,990	46,865	492,855	44,881,343	56,722,420	235,639	228,909	32,074	1,300
32 Total for 1888	5,440,008	877,497	6,317,505	541,448,257	649,469,664	3,024,011	3,076,283	242 784	48,272
Total for 1887	5,244,502	797,259	6,041,761	532,757,088	634,767,337	3,482,244	3,403,514	278,902	86,221

In 1875 the figures of Fire Insurance stood as follows for the Canadian, British and American Insurance Companies.

Year.	Net Cash Premiums Received.	Amount of Policies taken during each year.	Amount at Risk at date of Statement.	Losses Paid.
CANADIAN COMPANIES.	$	$	$	$
1875	1,646,654	168,896,111	190,284,543	1,082,206
BRITISH COMPANIES.				
1875	1,683,715	166,953, 268	154,835,931	1,299,612
AMERICAN COMPANIES				
1875	264,395	17,357,605	19,300,555	181,713

THE PAPER TRADE OF CANADA.

BY JOHN MACFARLANE.

Though the real development of the present large paper manufacturing industry of Canada began with the American civil war, the first paper mill was started almost at the beginning of this century. A firm of Americans, Mears, Wall & Jackson, started making paper at St. Andrew's, Lower Canada (Quebec), in 1805, and a second mill was started in the county of Portneuf about 1810. A mill was built at Bedford, N.S., about seventy-seven years ago, and the first mill in Ontario was built at Flamboro by Hon. James Crooks. For many years the few mills that were established made only coarse papers, chiefly wrapping papers; and up to the time of confederation all the paper used by the publishers of the maritime provinces was imported from Belgium, the imported article itself being of inferior quality and heavily loaded with clay. After confederation the makers of the upper provinces, aided by the uniform duties, secured the trade, supplying a better article at the same price.

The closing period of the American war witnessed a great activity in the Canadian paper trade, and memories of big profits linger gratefully in the minds of manufacturers of those days. A number of American mills were destroyed, and others had to close down as the war went on, so that ordinary news print rose to 28 and 30 cents

a pound, and large quantities were imported from Can
of the heavy duties. One sample order from a Boston firm
to $24,000.

The demand from the States and a general prosperity
gave such an impetus to the trade, that by the year 1873
were in operation in this country. From 1876 to 1880
depression which prevailed all over this continent and in
its effect on the paper trade, "and t e situation, thus
was further aggravated by the fact that American maker
outlet here for their surplus products, at such prices a
completely demoralize an already weakened market."
of this strain ten of these mills had, by 1879, failed wit
$550,000; seven mills representing a capital of $285,000
leaving only sixteen paper and pulp mills in active opera
date.

From about 1880 the tide turned, and the wave of
having swept over the States a year or two earlier tha
demand for paper became such that Canadian mills were
to ship to the States at a profit.

The following figures show the course of the trade fr
1889:

	1879.	
Paper and pulp mills in operation	33	
Number of paper machines	36	
Value plant and machinery	$1,700,000	$
Hands employed	1,100	
Annual wages	335,000	
" value of products	2,066,000	
Tons paper and pulp made	18,050	

In ten years therefore there has been an increase of $1
the capital employed in plant and machinery, of 1,150
ber of hands employed, of 97,400 in the tons of pap
annually made, of $1,278,000 in the value of products, and
in the wages annually paid, the increase in the avera
being nearly 10 per cent. The disproportionately great
the paper and pulp produced is accounted for by the fa
past ten years has witnessed a large development of pu
turing as a special industry, the number of pulp mills is
6 and the number in 1889 being 21. This particular br
industry is still increasing, and it is only a question of
wood pulp will form a regular item of our exports to fo
tries. Already considerable quantities of pulp wood a

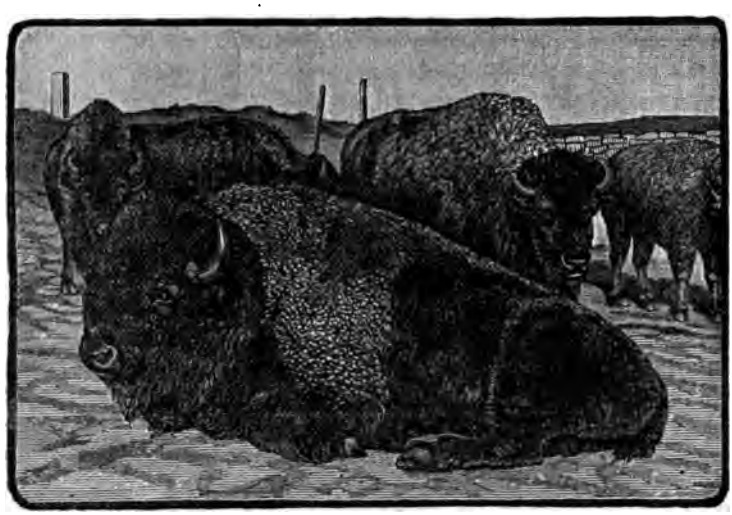
shipped to the States, and the diminution or exhaustion of the Norwegian and other forests of Europe point to the time when supplies there will no longer be so cheap as the Canadian, especially as the demand for wood pulp paper material is increasing, and the various other uses to which wood fibre can be profitably applied are multiplying every year. Canada possesses unlimited qualities of spruce and poplar, from which the best wood fibre is made, and the conditions for its manufacture are especially favorable in the provinces of Quebec and New Brunswick, where there are not only vast regions of country covered with these woods, but where the wonderful distribution of water power along the rivers and streams provides the most inexpensive means of carrying on the industry.

The export of paper is an industry which would follow the export of pulp at a date more distant, but not less certain to arrive if wood continues to be as important a factor in paper making as it is now. At the present time the Canadian market is supplied by Canadian mills with every kind and quality of paper, from the coarsest strawboard to the finest calendared and coated-surface papers, the genuine linen paper not excepted.

DOMESTICATION OF THE BUFFALO.

The disappearance of the buffalo, or bison, from the plains of the Canadian and American North West is a phenomenon that calls for notice. Fifty years ago these animals roamed over the plains extending from the present North West Territories in Canada down to Texas in the United States,in numbers beyond calculation,and every reader of natural history and sporting literature is familiar with the exciting accounts of buffalo hunts. Even down to 1872-3, by which period the slaughter of reckless hunters had greatly thinned the herds,it was recorded that the Atcheson, Topeka and Santa Fe railway transported 459,463 buffalo hides, and the Kansas Pacific and Northern Pacific each as many more,making over 1,250,000 hides,while it is said that more than an equal number were killed by careless hunters and left to rot, since a business of late years has been made of gathering the bones for manure and other purposes. Assuming that a proportionate number were killed in Canadian territory (the actual number is said to be larger) we may form some idea of the vast herds of these animals which once darkened the prairies of Canada. Within the past five or ten years,however,Canadians and Americans have awakened to the fact that this noble animal, whose meat is so

highly valued, and whose fur from the earliest days formed a staple sleigh robe, is practically decimated. A careful estimate made in 1887 showed that there were not more than 200 in all the United States territory, besides the few in the Yellowstone Park, and it was with difficulty that a few were obtained to preserve as specimens in the chief museums. At present there are probably less than 100 in Canada including the so-called wood buffalo, inhabiting the woody country to the north-east of Manitoba. The question of restocking some sections of our North West with the buffalo or a cross of the buffalo with Galloway or Durham cattle has become one of live



interest. The *Canadian Journal of Fabrics*, from which the accompanying illustration is taken, in discussing this question a few months since, gave the following interesting facts regarding the experiments made by Major S. L. Bedson, of Stony Mountain, Man:—

"It will be remembered that about eight years ago this gentleman, judging from the nature of the bison and what had been achieved in domestication of other animals, undertook to bring some of them into his farm, and obtain from them crosses with domestic cattle. He started with only 7 head, and so successful were his efforts that the herd of cross-breds increased, till last year they amounted to 83. There was no longer any question of the feasiblity of multiplying this herd into thousands, or of doing the same thing with a herd of

ork again before the animal becomes entirely extinct in Canada. vill happen soon, for of the plain buffalo, the 11 which were t Red Deer River last year are the only ones known to be left Northwest (and 3 of these were then killed), while of the so- wood buffalo, which Major Bedson considers identically the is those inhabiting the plain, only about 50 exist. The only ed animals now in the West are three at Sir Donald Smith's hese being crossed with Durham cattle.

ajor Bedson considers their profitable rearing beyond question. eat brings 20c. a pound in the Chicago market (he got 22c. at he sold), and at the average weight of 1,250 to 1,300 lbs. m would be, say, $250. A buffalo head brings $300, and a ed robe $40, making at least $590 per carcase. The herd in n, since their removal to the States, are held at $700 per head. er circumstance in favor of profitable buffalo breeding is that equire no stabling, but run at large both summer and winter, ct, stabling them would be injurious. The buffalo cow will annually as the domestic cow, and both pure breds and half are more easily managed and more gentle than one would e who has read the common stories of buffalo hunts.

may be of interest to note that in times past the Canadian half- often caught buffalo calves and drove them to their huts, g them a while as objects of curiosity, but never attempting rear them, as indeed they had little need when the wild an- were so numerous. The herd with which Major Bedson started periment were in fact got in this way, being purchased from



Africa and in Australia, and some even in California. So when Major Bedson began his experiment, many Manitobans well aquainted with the bison refused to believe he had a herd of domesticated buffaloes till they saw them.

"The Major's official duties as Warden of the Stony Mountain penitentiary will no doubt prevent him from going into buffalo ranching as a mere speculation, but now that he has indisputably proved the feasibility of it, who will take up the work and preserve the bison for the Canadian Northwest?"

A GRIST MILL OF SEVENTY YEARS AGO.

Among the Canadian curiosities shown at the late Colonial and Indian Exhibition in London was a primitive hand grist mill, said to be the oldest extant in Canada, sent by Sheriff McKellar, of Hamilton, Ont. Of this old "Bragh," as it was called, which is now in the museum of the Canadian Institute, Toronto, Mr. McKellar gives the following account:

"The want of a more effectual means of grinding the grain than the mortar and pestal was sorely felt, and when, late in 1818, or in the beginning of 1819, a stonemason named Menzies came to the little settlement, bringing with him a complete set of tools of his trade, Peter McKellar, my father, who possessed great mechanical talents, thought he saw the way to supply the need. There was no steam in those days, and no water mill or water power convenient to run one, therefore my father undertook to make a hand mill, or 'Bragh' as it is more correctly and euphoniously called in the original as spoken by Adam and Eve. A large granite boulder was found in the township of Aldborough, close to the county line of Elgin and Kent. From this boulder my father and Menzies made the 'Bragh' stones, the former fitting them into the frame early in 1819, just as it appeared when shipped to the Colonial Exhibition. The mill, when completed, was set up in my father's house, and was there in constant use for some years by the whole settlement. I can well remember seeing the big, strong Highland men coming in at evening after their day's work in the clearings. Each would come with his little sack of grist, which in his turn he would grind, and then return to his home, often two or three miles distant."



s illustration we are indebted to the *Mechanical and Mill-*
, Toronto, which makes this comment on the relic :—
side by side with the modern roller mills which now dot
it affords subject for thought, and brings very vividly before

yields a delicious sugar which has long been a peculiar product of Canada. There are about fifty species of maple trees distributed in North America, Europe and parts of Asia. Some of these grow only as shrubs, others as large trees. Of the North America varieties nine or ten are known commercially and botanically to Canada. The best known species are the red, swamp or soft maple, the white or silver maple, the rock, hard or sugar maple, the striped maple or moosewood, the mountain maple, the large leaved maple, the round leaved maple and the smooth maple, the last three being chiefly found in the Pacific regions. The bird's eye maple, whose hard and firm texture and beautifully variegated grain makes it unique among woods of the world for decorative and finishing purposes, is a variation in the growth of the hard maple. The maple is a flowering tree, and the pistils have two united ovaries, from the back of each of which grows a transparent wing. In some species the flowers appear before the leaves, in some with them, and in others after the foliage is developed. The ordinary kinds of Canadian maples grow from 40 to 70 feet high, and their profuse and beautiful foliage makes them valued as shade and ornamental trees. The first frosts of autumn make a magic transformation in the maple leaves, touching them up with the most dazzling hues, that form a spectacle of wonder to the traveler's eye and of delight to the artist's brush. In favorable falls these autumnal hues vary in a most wonderful way, the same woods and sometimes the same trees showing every variety of bright color, from a pale and delicate yellow to crimson, and on in the scale to deep purple; and these hues last from the first frosts that touch the green leaves to the time when they fall from the tree—a period of three to four weeks.

In the spring, when the sun begins to melt the snow at the foot of the trees, a water or sap having a sweetish flavor rises in the maple, flowing almost altogether in the daytime, and continuing during the period that warm sunny days are followed by frosty nights. The month of March generally includes this period in Canada. The sap is taken from the tree by inserting a tube or "spile" to the depth of about one inch, the sap flowing from the tube into a pail or trough, the tree yielding six to twelve quarts on a good "running" day. The liquid is collected from the pails, and boiled in large kettles till it is brought by evaporation to the consistency of syrup, when it is bottled as syrup, or boiled further and moulded into cakes of sugar. Each tree yields from one to two pounds of sugar, the product of

many gallons of sap. Both the sugar and syrup are considered much finer and more delicate in flavor than cane, sorghum or other sugar, and they command a much higher price in the market. According to the census returns, there were produced in Canada in 1881, 20,556,049 lbs. of maple sugar, of which about 15,500,000 were credited to the province of Quebec. The production of maple syrup would be about 700,000 to 900,000 gallons a year. The production is not likely to increase unless the replanting of maple trees is made to keep pace with the deforesting of the wild trees. The cut of birch and maple trees together was calculated at the census of 1881 at 4,414,795 cubic feet.

The laws which govern the circulation of the saccharine fluid in the maple are not thoroughly understood. It is doubted by many that the circulation is to be accounted for by capillary attraction, or even whether it is derived from the ground or flows up or down in the tree. Space cannot be given for a discussion of this subject, but the curious fact is to be noted that healthy trees, which have been cut down and lie on the ground for a year, and even two years, will often on being cut or tapped in the sap season yield freely a sap which is often stronger in saccharine matter than that from the living trees. Mr. H. Metcalf, a Quebec observer, noting this fact, in a certain case asks "Whence comes this sap? Does it remain in the tree all the time since it was cut? If so, why did it flow at this time, and not at any other time for a whole year? It could not come from the roots, because there were none. It could not have been absorbed from the air by the buds, for there were no buds. And if it came from the earth as it lay, it must have passed not only through the bark but from one grain to another." Neither could it have come through the cut end of the trunk, for maple sap never runs again from an old cut or incision. It is a question scientific men have yet to settle.

AGRICULTURAL IMPLEMENTS.

The manufacture, in Canada, of agricultural implements and machinery devoted to farm use, is very large and constantly increasing. Canadian harvesting machinery, windmills, threshing machines, stump lifters and like implements are not only made in quantities to supply the great home demand, but are rapidly gaining a high reputation in foreign countries. Evidence of this statement will be found

elsewhere in this work. We give in the accompanying cut an

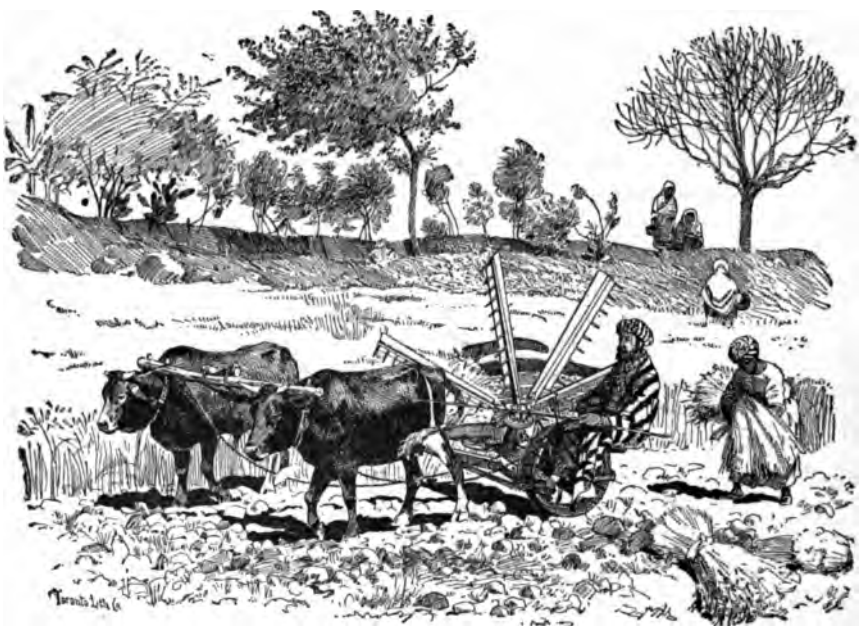


illustration of this in a Canadian reaper (made by the Massey Manufacturing Co., Toronto), at work on the plains of Sharon, in Palestine. The capital engaged in the manufacture of agricultural implements in Canada is estimated at $8,000,000 to $10,000,000, and of harvesting machines alone (reapers, mowers and self binders) about 35,000 are annually produced.

Messrs. N. W. Ayer & Son's newspaper directory of America, published at Philadelphia, gives the following statistics of the newspapers of Canada, for the years 1887 and 1888 :—

	1887	1888
Daily	87	89
Tri-Weekly	10	9
Semi-Weekly	17	20
Weekly	516	542
Bi-Weekly	4	2
Semi-Monthly	14	11
Monthly	74	82
Quarterly	1	
Total of all Issues	723	755



THE FISHERIES.

ınual yield of the Canadian fisheries fluctuates considerably r to year, both as regards quantities and prices. This is n such an industry, depending as it does upon weather 'run" of the fish. The total value of the yield in 1886 79,288, in 1887 it was $18,386,103, and in 1888 the total 18,510, to which the various provinces contributed the amounts :—

a Scotia,	7,817,030.42
Brunswick,	2,941,863.05
sh Columbia,	1,902,195.50
ec,	1,860,012.96
rio,	1,839,869.09
e Edward Island,	876,862.74
. & N. W. T.,	180,677.00

vinces of Nova-Scotia, New-Brunswick, Prince Edward l British Columbia showed a decreased yield as compared , and Quebec, Ontario and Manitoba, an increase. The ounts are exclusive of the consumption by Indians in olumbia, estimated at $3,257,500, and that of Manitoba erritories estimated at $60,375.

pended table shows the yield of each kind of fish, where it s over $100,000, and indicates the amount of increase, or compared with 1887. This shows what branch has pros- failed ; and by comparing these figures with those on ; and 174, the proportion of exports to the total yield will l most instances :—

	Yield.	Decrease.	Increase.
.....	$ 4,203,508	$ 112,062	
g	2,354,234	89,042	
.....	1,907,400	99,878	
rs	1,483,388	350,720	
el	981,659	489,665	
ck	948,732	.....	$ 84,720
sh	702.324	.....	248,759
.....	510,061	.....	19,275
.....	486,540	.....	248,408
.....	484,284	.....	72,676
ls	390,650	14,507	
.....	321,348	.....	155,294
ins	311,517	.....	49,493
.....	222,674	132,611	
el	194,458	.....	52,563
s	163,902	23,678	
es	128,541	18,817	
t	125,405	45,746	
on	111,116	7,827	
es	128,541	40,279	

There were twelve hatcheries under control of the Dominion Government. One of these at Dunk River, P. E. I., was closed in 1888 owing to the dam having been carried away ; the other eleven are distributed at the following points : Newcastle and Sandwich, in Ont. ; Magog, Tadousac, Gaspé and Restigouche, in Quebec ; Miramichi and St. John River, in N.-B. ; Bedford and Sydney, in N.-S. ; and Fraser River, in B. C. The number of young fish hatched out and distributed from these hatcheries in 1888 amounted to 88,109,000, and the total quantity of ova laid down during the year was 98,214,000. Evidences of the practical success of artificial means of restocking our waters with fish are gradually accumulating. In Ontario, for instance, whose waters afford a more ready means of testing the method, the value and quantity of the yield increase yearly. The increase there in 1888 was $308,019, and is largely in whitefish and salmon trout which have been most freely propagated.

Various seasons of the year are considered close seasons, when fishing is prohibited, these seasons varying in different provinces, and varying also according to the kind of fish. Net fishing of any kind is prohibited in public waters, except under leases or licenses. The size of nets is regulated so as to prevent the killing of young fish. Nets cannot be set or seines used so as to bar channels or bays. A general weekly close-time is provided, in addition to special close seasons. The use of explosive or poisonous substances, for catching or killing fish, is illegal. Mill dams must be provided with efficient fish passes. Models or drawings will be furnished by the Department on application. These enactments and close seasons are supplemented in special cases, under authority of the Fisheries Act, by a total prohibition of fishing for stated periods. The following Regulations, applicable to the Province of British Columbia, were enacted by order in Council, dated 26th Nov., 1888 :—Net fishing allowed only under licenses. Salmon nets to have meshes of at least 6 inches extension measure. Drift nets confined to tidal waters. No nets to bar more than one-third of any river. Fishing to be discontinued from 6 a. m. Saturday, to 6 a. m. Monday. The Minister of Marine and Fisheries to determine number of boats, seines or nets to be used on each stream.

The total number of fishing bounty claims received in 1887 was 15,576 against 14,812 in 1886. Of this number 182 were rejected [redacted] compliance with the regulations. The number of vessels

vas 28,252, an increase of 496 boats and 806 fishermen as
d with the previous year.

:otal expenditure for the fisheries service during 1888
:d to $377,487.59, made up as follows :—General service,
65, fish breeding, $41,082.04, fisheries protection service,
98, fishing bounty for 1887, $163,757.92. There are nine
l fishery officers employed in the outside service of this
and these together with the Fishery Overseers and Wardens
everal Provinces, including the officers and crews of the
ies Protection Cruisers," make a total of 885 persons. To
ıber might be added about 25 Special Fishery Guardians,
employed for short periods during the close seasons, making
of 910 persons engaged in the fisheries service of the
on.



GRAND TRUNK RAILWA

HAVING regard to climatic conditions prevailing in during a portion of the year, few other countries have more solid advantages from railway enterprise. To pa bound from primitive methods of locomotion to the lu palace car was a great step in advance. We find that companies were formed soon after the successful introduc the system in England, and that the necessity was at once of providing means of rapid and easy communication betw centres of population and trade.

Numerous Acts of Parliament were passed authorizing takings, many of which are now consolidated with the grea prise which is the subject of this article.

The Grand Trunk Railway system of affiliated roa represent an aggregate of 4286 miles, and the published st of that company evidence the magnitude of its resourc operations.

Its capital account shows an expenditure of over £56, sterling, whilst the revenue receipts for 1888 were £3,7 The freight business during the same period amounted to 7, tons, and the passengers carried numbered 6,201,124.

For the purpose of these extensive traffic operations tl way has been steel railed throughout, and there have be vided 17,802 cars and 705 engines. This large rolling st necessitated the construction of workshops and the most im modern machinery, foundries and other appliances neces independence in that department of the service.

The Grand Trunk employs an army of about 20,000 m the company has taken much interest in the successful d ment of Superannuation and Provident Institutions, m practically by the beneficiaries themselves, and subsidized shareholders. Under the rules of the former, members entitled to retiring pensions, and the several benevolent tions for making provision against sickness and deatl

recently been merged into the Grand Trunk Insurance and Provident Society, whose first annual report is now before us.

There were 10,485 members on the 31st December, 188 8 the actual disbursements for the year in payment of the objects of the society were $130,821.

Medical attendance is provided during sickness on payment of monthly fees, and at death bereaved families become entitled by assessment on survivors to liberal allowances.

The advantages of this society are shown in the recorded death roll of 138 employés during the year.

These 10.485 men belonging to the association are insured under its rules to the amount of $ 5,817,750.

The Grand Trunk has always been recognized as the back bone of Canada, and as the great international route between the Eastern and Western States in the American Union. The road in connection with the Intercolonial (Government) Railway extends from Halifax to Detroit. where it joins a large South and direct Western American system. Passing over the same eastern ground the railroad runs direct West from Toronto, and connects at Port Huron with its affiliation the Chicago and Grand Trunk Railway, and at Chicago becomes a member of the great aggregation of systems in that centre of commerce. The company possesses its own Ocean Terminus at Portland, and reaches by its intimate connections all the chief American ports. At the Niagara frontier interchange of traffic is effected with the Trunk Lines leading to New York. The extreme limits of the entire system by the Parent Road, its affiliations and friendly connections are Halifax, Portland, Boston, New York, Detroit, and Chicago.

The company has long and naturally cultivated its ocean steam ship alliances, and was the first to introduce the system of issuing through Bills of Lading. The services to Liverpool, Glasgow, Bristol, London, and other European ports, via the St. Lawrence and the American maritime termini, complete the international character of this great undertaking.

QUEBEC HARBOUR, FROM THE CITADEL.

The country traversed by and tributary to the Grand Trunk Railway possesses never-ending attractions for both tourist and emigrant. A few years ago Canada was thought of by the average European as being for the most part locked in ice—a land where the settler, in intervals of work, had to dispute his

supremacy with the Indian and the bear. The premier col now, however, generally known to be endowed with a magn climate, to be well watered, to have an extremely productiv covered with miles of forests, and to be bright with smiling steads. Her cities and towns have been accurately descri teeming with a prosperous, energetic and intelligent race,



for the sportsman, the lakes, rivers, forests, and shrub ofl exhaustible *matériel* for rod and gun. All this, moreover—t to the rapidity and safety with which the Atlantic is daily c —is just as accessible to-day as Paris was to the Londoner years ago. Indeed, the voyage from Liverpool to Que looked upon as one of the most interesting portions of a Canada.

WOLFE'S COVE (QUEBEC).

The summer visitor is landed at "Quaint Quebec," or, rat Point Levis, the terminus of the Grand Trunk Railway nestling at the foot of a hill and gazing up at the grim from across the St. Lawrence. The ancient capital of spreads itself over Cape Diamond (350 feet above the rive is to all intents a seventeenth century French town, beauti her antiquity, and fascinating for her historical assoc Romantic and drowsy, Quebec seems to pride herself in off lurid contrast to the busy life of the river at her feet. It

Town which includes the fortress, and has earned for this old the name "Key of the St. Lawrence." Quebec is also on another side by Martello Towers, which cover the h from the Plains of Abraham, consecrated by the blood of No city of her size on the American continent is so rich d relics and religious corporations; many of the former are



orthy a visit. In the Ursuline Convent are the remains of gallant antagonist, Montcalm, and the curious traveller is the little house where Montmorency was laid out, as well pot where Montgomery fell to a Canadian shot. Dufferin , occupying the site of a house built by Champlain, is the e promenade of this city of tortuous streets and *culs de sac.* niles away, a compact mass of water, fifty feet wide, is two hundred and fifty feet without a break over a sheer t is known as the Montmorency Falls. Other Falls are the and the Chaudière. Near the former is an old Huron village—most interesting.

Montmorency Falls are beautifully situated, and consist of nd compact mass of water, 250 feet high and 50 feet wide, lunges, without a break, over a precipice into clouds of mist, n flows into the St. Lawrence. Close by is the little room limand House) occupied by Her Majesty's father in 1791.

sit to Lorette will well repay the pains. It is an ancient

village of the Hurons, and the present inhabitants are a qui sober people, in whom Indian blood predominates, thougl never unmixed. The Lorette Falls, Lake Beauport and L Charles, all contiguous, are worth a passing call. There a some fine falls called the Chaudière Falls, or the "The Caul



SECTION OF VICTORIA BRIDGE, MONTREAL

To get to Montreal, from Quebec, the traveller must cr Victoria Bridge of the Grand Trunk Railway—a tubular st of magnificent proportions, which spans the St. Lawren gives uninterrupted communication to Western traffic wit of the United States. Including the abutments, the bri 9084 feet in length. It is just outside Montreal.

MONTREAL FROM MOUNT ROYAL.

Montreal, or Mont Royal, the commercial metropolis of C and one of the handsomest cities in America, is situated up south shore of an island formed at the point where th Ottawa debouches into the St. Lawrence. The latter ri about a mile and a-half wide opposite the city, and the frontage is lined with massive walls, quays and terraces c limestone. Looking round at magnificent public buildings, noble thoroughfares, at the palatial residences nestling at t of the mountain and in other picturesque *environs*, one's n instinctively reverts to 1535, when Jacques Cartier first

the present site of Montreal, then the Indian village of Hochelaga, upon which occasion it was that, conducted by Chief Donnacana to the mountain-top, and impressed with the sylvan beauty of the scene, he named the spot "Mont Royal." Visions of Champlain's attempt to find the Indian village, meanwhile swept away by a



hostile tribe, and the various mutations up to the date of Montreal becoming permanently British, crowd upon us and add to the interest of the scene.

The mountain is bordered by gardens and ornamental enclosures, and affords fine views in all directions. From the summit, what a panorama meets our view! There stretches away the dreamy length of the St. Lawrence, islanded as far as the eye can reach. The Catskills are in the distance, and the tips of the Green Mountains. Nearer are the humps of Montarville and Belœil, while to the north may be seen rising the blue hills of the Laurentides. The city lies at the foot, humming with busy industry. Near by, hewn out of the eternal rock, are the immense reservoirs from which Montreal draws her daily 40,000,000 gallons of water.

The Lachine Rapids, a boiling mass of waters pitching down an inclined plane at twenty miles an hour, may also be visited from Montreal by taking train of the Grand Trunk Company up to Lachine before breakfast, and so catching the down-stream boat. Though full of pleasant excitement, the trip is practically attended with no danger.

CARNIVAL ICE PALACE, MONTREAL,

During the winter season Montreal has of late years most successfully inaugurated a Carnival week dedicated to natural

sports, and no more beautiful effects of the kind have perhaps ever been produced than by the ice palaces and other erections of that slippery but, when designed, beautiful material under the different



aspects of shade and colour in which they have been presented to the eye. These Exhibitions and the charms of tobogganing, snow-



WINTER SPORTS, TOBOGGAN SLIDE.

shoeing and other winter sports, draw large crowds to Montreal and produce a period of absolute gaiety and enjoyment.



MOUNT WASHINGTON RAILWAY (WHITE MOUNTAINS).

The White Mountain range, situated in New Hampshire, is a popular summer resort of both Canadians and Americans. The scenery is Alpine, and amongst the 200 peaks, covering an area of 2700 miles, and presided over by Mount Washington, may be found any temperature, as well as natural beauties and sporting attractions unrivalled on the continent. A railway—in itself a marvel of constructive skill—winds round Mount Washington, from the summit of which a 600 mile horizon is commanded. The Grand Trunk line from Montreal to Portland (terminus of the line on the Atlantic coast) passes through the heart of this wonderful region, so bringing it within easy reach of travellers landing either in Canada or in the United States.

PARLIAMENT BUILDINGS, OTTAWA.

Ottawa is charmingly situated on the Ottawa River, owing its dignity as the governmental headquarters to the jealousy which existed between Montreal and Toronto when Parliament sat alternately in the two cities—much in the same way as Washington was selected as the capital of the United States. Government buildings occupy a bluff named Barrack Hill, in the centre of very handsome grounds. They form three sides of a square; the Senate and the House of Commons are of the same size as the English Lords and Commons; the whole structures being grand in proportion and elaborate in finish. Rideau Hall, the Governor-

General's residence, owes such attractions as it possesses rat
its surroundings than to its architectural beauties. Conn
the River Ottawa with the St. Lawrence is the Rideau
occupying the base of a ravine 150 feet below the roa
Chaudière Falls, great and small, should not be overlooked



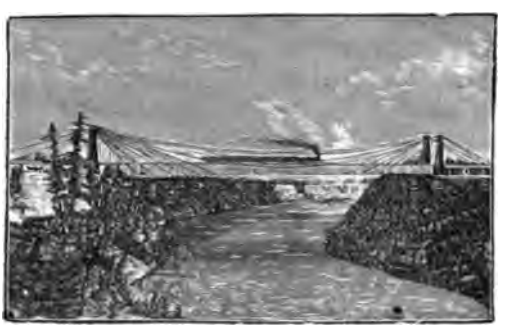
pleasure-seeker; they are considered to rank only second in
to Niagara, and are an easy walk or drive from Ottaw
opportunity serves, a descent down one of the many "
slides" would also prove a curious experience, and mig
coupled with a visit to one of the numerous lumber mills,
huge trees are fished out of the river, trimmed, and cut into
with inconceivable rapidity.



VIEW IN THE LAKE OF THE THOUSAND ISLAN

A remarkable archipelago, the Thousand Islands, do
St. Lawrence in a most romantic manner, and extend

Kingston (a noted military depot) some forty miles down to Brockville. These islets, varying in size from a yard rock to a domain of several acres, are a very paradise for artists, wild fowl shooters and anglers; nor are they lacking in interest to the historical student. Much the best way to visit this locality is to sail down from Kingston to Montreal, which course would also enable the traveller to shoot the celebrated Lachine Rapids.



NIAGARA RIVER SUSPENSION BRIDGE.

The Grand Trunk gives direct access to the celebrated Niagara Falls, and from its Suspension Bridge the through passenger can obtain an average idea of the beauty and grandeur of the scenery, which, however, to be appreciated properly must of course be visited. The gallant but unwise attempt of Captain Webb to swim the rapids adds interest to the locality.

CHICAGO AND GRAND TRUNK RAILWAY STATION, CHICAGO.

The Chicago and Grand Trunk previously referred to as an affiliation has with other companies recently erected a very magnificent railway station in Chicago, provided with every accommodation and even luxury which passengers can desire. The station is also designed to meet the comfort of European emigrants, efforts to secure which are made a specialty of the service. It is situated in the position which the tendency of city growth is fast making central, and may be considered one of the finest, if not the finest, in Chicago.

It will thus be seen that the Grand Trunk Railway is to be regarded as an undertaking of which the Dominion may well be

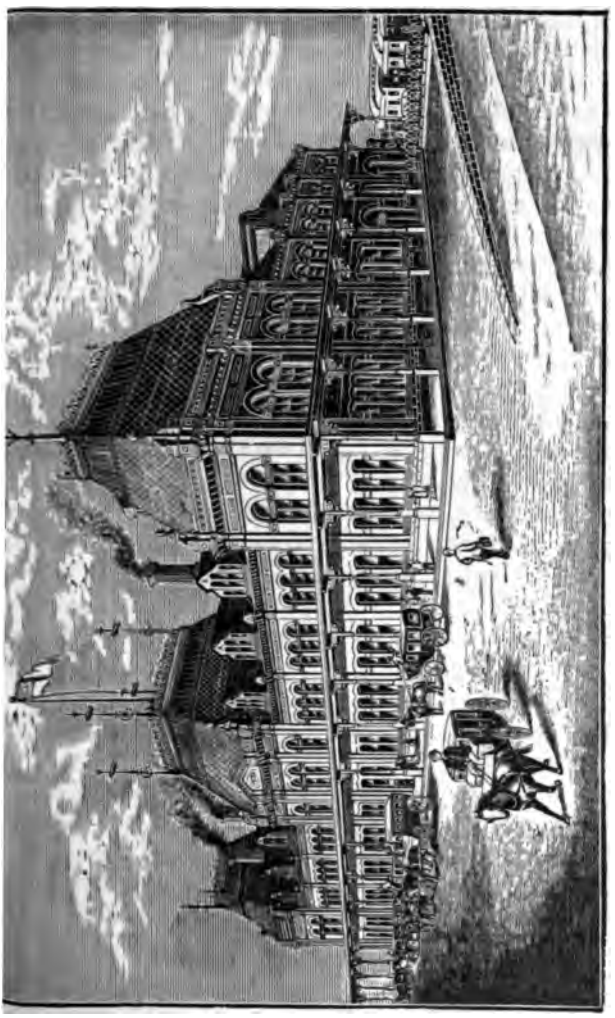
proud, and from the construction of which it has largely profite
The company has not only contributed to the well-being of Canad



but has a wide and popular American reputation, and exerc
large and conservative influences in the railway councils of
continent.



PARLIAMENT BUILDINGS, OTTAWA.



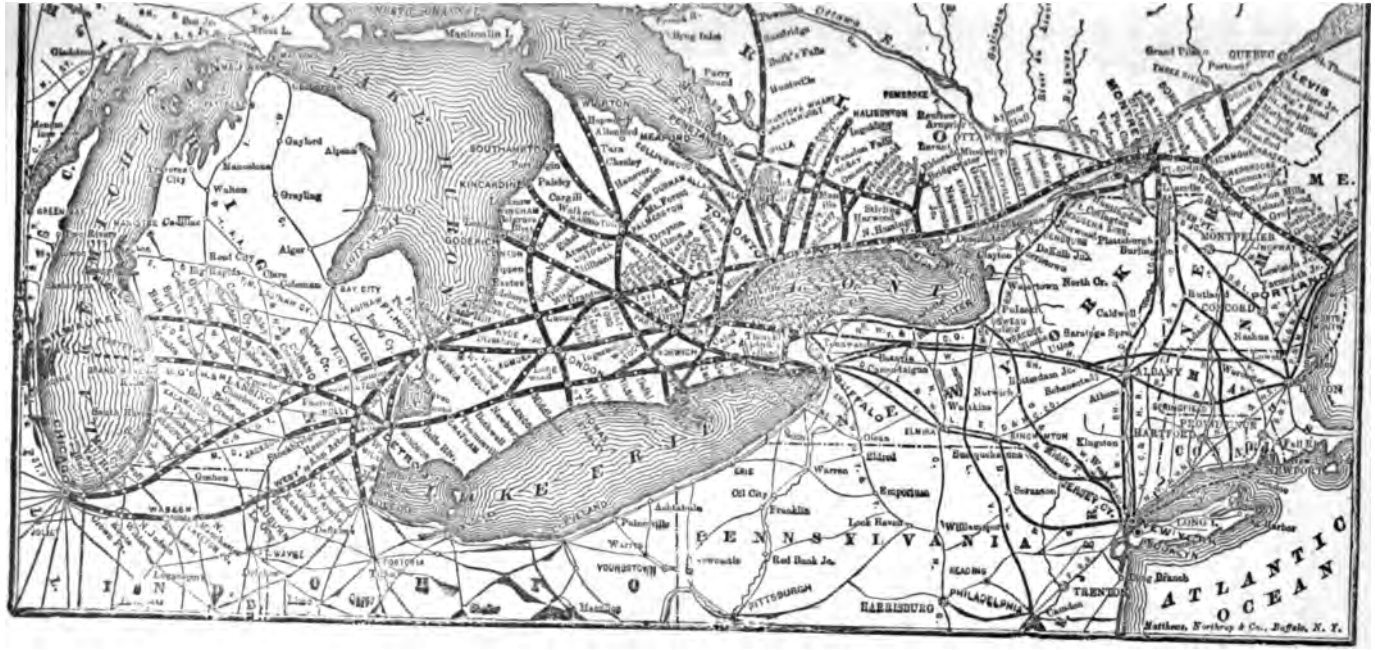
NEW BONAVENTURE STATION, MONTREAL.

ng the other recent works of this corporation the new Bona- depot in Montreal is worthy of special mention. This l structure, which was completed in 1888, is 240 feet wide by t deep, exclusive of porticos and platforms, and was built at of $300,000. The general waiting-room is a magnificent ent about sixty feet square, having a ceiling forty-four feet ıd all the departments are equipped in the most modern style.

Supplementing the figures in the first part of this article, it may be mentioned that a report of last year showed the following equipment in rolling stock, exclusive of recent annexations of the line: 709 engines, 361 first-class cars, 217 second-class, 69 post office cars, 131 baggage cars, 18,005 freight cars and 49 snow-ploughs, a total which if coupled together on a single track would make a train a little over 133 miles long, or a distance more than from Montreal to Ottawa.

In a review of railway progress in Canada during 1888, *Railway Life*, Toronto, thus refers to the Grand Trunk :—"The Northern Railway system has lately been obtained by the Grand Trunk giving further connections on Lake Huron and elsewhere. The mileage of this system is about 450. The connections of the line have latterly been still further increased by the construction of a line from Fort Covington to Massena Springs in the State of New York, a distance of some twenty-five miles. This gives the line a connection with a large system of railways in the State of New York, the Rome, Watertown and Ogdensburg in particular. A new communication with the West is by this obtained. Another new link from Beauharnois to Valleyfield is of use as a feeder. The commercial advance of the Grand Trunk and the increasing demands made upon its resources necessitate the double tracking of the line throughout its entire length, and this work is being proceeded with as rapidly as the finances of the company render it possible, some sections being already completed."

A line now in contemplation from Ottawa to Vaudreuil through the county of Prescott will give the Grand Trunk the shortest route from Montreal to Ottawa, and a contemplated extension of the Midland system to Ottawa would thus complete the circuit of the thickly settled regions of Ontario. Anyone looking at the map of Ontario will be struck with the remarkable network which the Grand Trunk lines now form throughout the province. The thoroughness with which the country is covered and the public needs served here is unexampled in any railway system on this continent, or perhaps in the world. The growth of this great system of railway has been so gradual, that few realize what a factor it has been in the settlement of the country, and in the development of its material resources. In 1853, when the Grand Trunk had its beginning, the population of Canada was only 2,313,000; but since that time hundreds of



CONDENSED MAP OF GRAND TRUNK SYSTEM.

villages and hamlets along the line have become cities and towns, with thriving populations and numerous factories. Many of these centres of trade and manufacture have, indeed, been the direct result of the rapid and cheap means of transit afforded by the railway; and there now exist on the main and branch lines of the railway within Canadian territory over 500 cities, towns and villages. A consideration of such facts will show how powerful and beneficent a force the Grand Trunk has been in the commercial progress of Canada.

STEAMSHIPS.

On pages 167-169 we gave statistics of the Canadian merchant marine. We add in the following pages a few particulars relating to the origin and progress of some of the leading steamship lines of the Dominion.

THE ALLAN LINE.

The history of the Allan Line of steamers is, in an important sense, the history of steam navigation in Canada. One of the earliest organized lines crossing the Atlantic, it has developed, from the nucleus of a single ship, seventy years ago, to one of the largest lines of steamers in the world; and it has gained this position in the face of disasters, discouragements and difficulties that swamped more than one powerful company, and might have swamped this had it not had at its head in the early days a man of the iron resolution and great executive ability of Sir Hugh Allan. He was born, says a chronicler, at Saltcoats, in Ayrshire, on September 29th, 1810. He came of the sea-faring race, for his father, Captain Alexander Allan, was a shipmaster, who for thirty years traded as such between the Clyde and Montreal. Two of his brothers were, in like manner, engaged in maritime pursuits, and afterward became members of the firm. Leaving school at the age of thirteen, he at once manifested the instinct of his family, and took to the water like a duck. His education (taking the meaning of the word as "leading up to") was eminently practical; first, in a shipping office in Greenock; then a year sailing with and under the command of his father, thus acquiring an exact knowledge of practical seamanship. This knowledge was supplemented by a study of navigation. This experience was only a prelude to the study of ships, and the qualification of shipmaster was only an introduction to that of shipowner. After a time in a dry goods store in Montreal, we find the

young man making a tour through the Eastern States and Canada, and then embarking, at twenty-two, on his career on the sea. In those days, ships to Montreal were few, and wharves there were none. The one little tug "Hercules" had to be assisted up the current by oxen harnessed to the ship's hawser. The Ayrshire lad, standing on the deck, could little have thought what changes fifty years would bring, and how *his* ships were to come hither, ships which should need neither steam-tug nor oxen to aid them, but in their majesty should ride up to massive wharves and warehouses all his own.

In 1837 the first steamship, the "Sirius," crossed the Atlantic; and three years after Hugh Allan's firm took the contract of building a large steam gunboat for the British Navy. Soon after they saw the advantage of steamers, and although their fleet of sailing ships had increased, the firm, now strengthened by the acquisition of Mr. Andrew Allan, put aside their prejudices, and not only adopted steamers, but advanced a stage ahead of the steamship owners of the day, and fitted all their boats with screw propellers instead of paddle wheels. The "Canadian" was the first boat built by them, and was followed by the "Indian," the "Anglo-Saxon," and the "North American." The first named made her maiden trip in 1853, and soon afterwards she and the "Indian" were employed by the British Government in the Crimean war. At the close of the war the four ships began a regular service between Liverpool and Montreal, under a contract to carry the Canadian mails—at first fortnightly, and afterwards weekly—which has continued to this day. At this time lighthouses along the Canadian coasts were few, and the currents of the St. Lawrence were little understood. The "Canadian" was wrecked in the St. Lawrence, and trial and disaster followed trial and disaster; but through all this the courage of the Allans never failed, and at last they demonstrated that the St. Lawrence route was to be made, through improvements in knowledge and skill, the safest as well as one of the most pleasant routes across the Atlantic. The first steamers were of 1500 tons gross measurement, now some of them are over 4000, and the "Parisian" is 5500 tons, being one of the largest steel steamers afloat.

They now have direct connection between Liverpool, Glasgow, Londonderry, Galway and Queenstown on one side of the ocean, and Quebec, Montreal, Halifax, St. John, Portland, Boston, Baltimore, and Philadelphia and the River Plate (South America) on the other side.

The St. Lawrence route to Quebec is the shortest in mileage port to port, even by the route *via* Cape Race ; and during the mer months,when steamers take the route by the Straits of Belle the distance is still further shortened by about twenty hours. moreover, considered to be the safer way, in consequence of being much less traffic along that route. Another and a ver portant advantage of the route by Belle Isle is, that it is in r only five and a half days' journey from the north of Ireland, the Allan boats call. The remainder of the passage is in com tively smooth water, the advantage being more especially app on the homeward journey, when during the first few days passe have time to become accustomed to the peculiarities of life on ship before they get out into the billowy waters of the Atl The route is daily growing in favor with passengers bound t from the Western States ; for in addition to the facilities of conveyance afforded by the fine chain of lakes, upon which ste ply with regularity, the Grand Trunk and the other railways o ada have through connections with all places in the West.

From Montreal to Liverpool is 267 miles shorter than from York to Liverpool by the southern course, and the route i miles shorter to Quebec, and from Rimouski, the present lar place for passengers and mails, 160 miles shorter still, or, in a miles shorter from land to land by the Canadian route. From to land the passage is seldom more than five days. Once the Straits of Belle Isle, ocean travelling is over, and for 760 the steamer proceeds, is smooth water, first through the Gul then through the magnificent River St. Lawrence. The qu passage on record, between Quebec and Liverpool, was made i by the "Parisian" of this line, being 6 days, 15 hours, 32 mi allowing for difference of time. The passage from Belle I Moville was accomplished in 4 days, 16½ hours, and lan only lost sight of for 4 days, 11 hours.

The A an li e has a fleet of 31 steamers with a total tonn 100,820 tons ; and a fleet of 12 clipper sailing vessels with of 17,432 tons, making a grand total of 118,252 tons. The Line ha e no insurance, or rather they are their own in having a fund for the purpose.

Main & Montgomery to send their steamers to Quebec
ntreal, as the time had now arrived when the trade between
ol and Canada required a second line.

ain Henry Flinn, the senior partner of Messrs. Flinn, Main &
omery, was well known as the commander of various vessels
Canadian trade, beginning with the "Baron of Bramber"
, when there was only a draught of 11 feet of water in
t. Peter. In pursuance of the negotiations so begun, Cap-
nn visited Montreal, and capitalists there welcomed the pro-
line of steamers. The company was formed with head offices
rpool, Messrs. Flinn, Main & Montgomery being the manag-
ctors, with a board of directors of well-known Liverpool
ners and merchants.

steamers "Dominion" and "Ontario" were promptly con-
for, followed by the "Montreal" and "Toronto," then the
a" and "Oregon," the latest being the "Vancouver," now so
ly known amongst the traveling public.

"Vancouver" was built by Chas. Connell & Co., Glasgow,
s launched in March, 1884. Her dimensions are:—Length
n perpendiculars, 430 feet; breadth of beam, 45 feet, depth
, 33 feet 6 inches; tonnage, gross register, 5300 tons. Built
sett iron, under special survey of the Admiralty for naval
nsport services, and of Lloyd's according to their heaviest,
e three-decker, specification, but in many important respects
hened in excess of the requirements of their highest class,
e exceptionally strong. The well-known engineers
& James Thomson, Finnieston Engine Works



and she has in addition a bridge deck. The plan of the steerage and intermediate and the sanitary arrangements are said to be the best of any ship in the passenger trade. Accommodation is provided for 180 saloon passengers, thirty second cabin, eighty-eight intermediate, and 1,200 steerage. Electric light is supplied not only to saloon and state-rooms of first-class passengers, but to the intermediate cabins, steerages, forecastle, and every department of the ship, including the side lights in the lighthouses. The saloon is admidship, forward of the engines and boilers, and is a very handsome apartment extending the full width of the ship, with seats for 160 persons at four tables running fore and aft, and five tables on each side athwartship, thus permitting easier access, and making up family parties at table. Revolving arm-chairs and sofas are richly upholstered in crimson velvet. The cabinet-work of the saloon is in panels and pilasters of teak, maple, plane-tree, and walnut, decorated in excellent taste with designs of fruit, foliage, flowers, birds, &c. There is a handsome ladies' music-room, with piano, library, and a ladies' boudoir near the saloon, with bath-rooms, closets and lavatories carefully planned. The saloon state-rooms, which are upholstered in harmony with the other part of the vessel, are exceptionally spacious and lofty, and are provided with pneumatic bells for communication with the steward's department. Being in a single line along the side of the ship, they are airy, light and cheerful. The promenade deck is 188 feet long, without any obstruction whatever, the Fidley casing rising about seven feet high, and carrying up overhead any dust or heat from the boiler department; the "Vancouver" is in this respect unsurpassed. There is also ample promenade room on the main deck for intermediate and steerage passengers.

The "Sarnia" and "Oregon" are also magnificent ships, with the most complete passenger accommodations in all departments.

The company now have a fleet of eight steamers, three of which the Dominion, Ontario and Texas run between Montreal and Bristol. The following is a list of the fleet:—

Vancouver	5,700	tons
Sarnia	3,850	"
Montreal	3,300	"
Texas	2,700	"
Oregon	3,850	"
Toronto	3,300	"
Dominion	3,200	"
Ontario	3,200	"

It speaks well for the spirit and enterprise of the Dominion line that all these steamers were built without any aid from Government subsidies, but three of them have by arrangement with the Government and Messrs. Allan Bros. & Co. been for the past three years associated with steamers of the Allan Line, in performing the mail service between Liverpool and Canada.

The Dominion, like the Allan line, have had their trials, losses and discouragements to encounter, but such difficulties have been taken as an incitement to renewed exertions to extend the line, and make it one of the institutions of Canada. The shippers and the public of Canada have shown their appreciation of the enterprise in the favor and patronage bestowed on the line; while on the part of the agents, commanders, officers, and servants of the company, there has always been the desire to merit approbation, until now the Dominion line has a specially good reputation for courtesy and attention to the wants of their patrons.

THE FURNESS LINE.

It was with the commendable object of supplying the Maritime Provinces of Canada especially with steamship connection, that Mr. Christopher Furness, the large ship-owner of West Hartlepool, Eng., diverted thither several of his steamships which had so successfully met the wishes of the merchants and shippers of Boston, Mass., and formed a new line of cargo carrying steamers between London, Halifax, and St. John.

The traditional dangers of navigation on these coasts did not daunt a man of the indomitable perseverance and energy of Mr. Furness, and there is now a splendidly organized service running regularly between London, Halifax, and St. John, giving every facility to the shippers and merchants of the Provinces of Nova Scotia, New Brunswick, and Prince Edward Island to carry on an increasing trade with the mother country and Western Europe.

What the splendid harbor of Halifax is to Nova Scotia, St. John is to New Brunswick; and the new short line through New Brunswick from Montreal to St. John now just completed opens a new era in the traffic of the Dominion. In trading with these two cities, therefore, the Furness Line not only taps the central commercial depots of the maritime provinces, but through them lays claim to an important share of the trade of the West.

The Dominion Government, recognizing the great advantage to

be derived by Canada from a direct and regular service between Nova Scotia, New Brunswick and London, some five years ago agreed to subsidize the Furness Line, which is, therefore, now conducted under the special approbation of the Government.

The steamers sail every 10 days from each side, and take goods on through bills of lading from and to any city in the Dominion and Western Europe, by special arrangement with the railroads and steamship lines connected with points of departure and entry.

The steamships of this line are not confined to the London, Halifax, and St. John service; they also conduct a spirited and well organized service between London and Boston, and in conjunction with several of the Steamships owned by Messrs. Wilson, Son & Co., of Hull, a service of fortnightly sailings, between New-Castle-on-Tyne and New-York.

The following is a summary of the Furness line steamships:—

"Durham City"	4,000 tons
"Stockholm City"	3,600 "
"Gothenburg City"	3,600 "
"Boston City"	3,100 "
"Washington City"	3,250 "
"Ripon City"	3,100 "
"Watherby City"	3,100 "
"Baltimore City"	3,900 "
"Chicago City"	3,900 "
"Calcutta City"	3,800 "
"New-Borough"	3,000 "
"Sultan"	3,500 "
"Katie"	4,000 "
"Madeira"	3,500 "
"Pleiades"	3,000 "
"Fire Queen"	1,700 "
"Ulunda"	2,500 "
"Damara"	2,500 "
Total tonnage	59,050 tons

Some of these ships, notably the last two, have excellent passenger accommodation at very reasonable rates. The "Washington City" is popularly credited with being the largest carrier on the smallest consumption afloat. Her consumption is only twelve tons per day, on which she steams 10½ knots, and carries 4,200 tons cargo.

As for their cargo carrying qualities the following extract from history of this line in the *Canadian Exhibitor*, published at the Colonial and Indian Exhibition, will shew that the projector of this line keeps constantly before him the interest of Canadian exporters:—

"The ventilation of these steamships receives the closes attention

tion of officers. When it is remembered that very large quantities of apples and other perishable goods are annually shipped by this line, it will be seen how essential it is that the arrangements for the ventilation of cargo should be as near perfection as possible. Mr. Furness has shown himself ready to meet the demand for improvement, and in order to afford facilities to Canadians for the shipment of fruit and other perishable supplies, is considering the question of introducing the dry air freezing machines, which have proved so successful in the ocean trade of other countries.

"Mr. Furness takes an active personal interest in the commercial affairs of Canada, and to show what might be accomplished in extending our foreign trade in lines yet undeveloped in Eastern Canada, he made an experiment on which, we feel sure, a large business might be founded. He purchased in Canada a cargo of 'store' cattle, and took them to England on his own account. Part of the shipment was sold on arrival in England, and the balance, consisting of 100 head, were kept on his farm till Christmas for store purposes, when they were sold at a very good profit. Although he has not the facilities for carrying on this special trade himself, Mr. Furness's spirited venture shows that such a trade, conducted upon an extensive scale, would be remunerative on both sides of the water.

"The Furness Line transported the whole of the exhibits from Canada to the Colonial and Indian Exhibition, and the goods were handled, as all those experienced as shippers know, with the utmost care."

The first steamship which made the voyage from America to England all the way by steam was a Canadian vessel, the "Royal William." She was a vessel of 1000 tons and 180 horse power, and was built at Three Rivers, her engines being put in at Montreal. See made the voyage from Pictou, N. S., to Cowes, Isle of Wight, in 14 days, in the year 1833. This was five years before the voyage of the "Sirius," which has been generally supposed to be the first vessel to cross the Atlantic entirely under steam.

It may be worthy of mention here that Mr. Cunard, the founder of the well known line of steamers of that name, running between Great Britain and the United States, was a Canadian, being a native of Nova-Scotia.

LONGEVITY
IN THE MARITIME PROVINCES

About three years ago the attention of the writer was direc to this subject, through noticing in the obituary columns of Maritime Province news aper exchanges the large proportion deaths at 70 years of age and upwards. After noting a numl of paragraphs giving some account of the lives of these old peop he began to collect material on the subject, and the facts th gathered—supplemented by reports from some gentlemen to wh he wrote for information—are the basis of the considerations whi follow. The fact that the writer had only nine newspapers (a three of these only the latter part of the time) out of about eigh published in the three provinces; and lived in another province hi self, will explain why no attempt has been made to lay before t reader a census of any particular province for statistical co parison with other communities. But from the very fact that many cases of extreme old age are furnished on reports thus inco plete, the reader may be disposed to admit that there is somethi about the climate or the circumstances of the people in the provinc by the sea that tends greatly to length of days.

It should be observed that with the exceptions specially noted, a cases later than January 1st, 1889, are given, and that there we several periods of one to two months when, owing to the writer absence from home, the gathering of facts was neglected.

The number of biographical and obituary notices of people 8 years and over in the Province of Nova Scotia was 512. Of thes 26—whose names, addresses and ages are given below—were ove 100 years.

Name	Address	Age
Mrs. Elizabeth Taylor,	Berwick	108
Mrs. Taylor (sister of above)	"	102
Edward C. Foster,	"	100
Mrs. John Palmeter,	Long Island	100
Wm. Moody,	Pugwash	107
Mrs. Edward Power,	Canard, Annapolis Co.	103

Name	Address	Age
Alex. McDonald,	East River, C. B.	101
Miss Mary Reynolds,	Upper Musquodoboit	101
Joseph Wade,	Granville	102
Ann Landry,	River Bourgeois	102
Mrs. Dorcas Morine,	Port Medway	100
John Bouchie,	Arichat	101
J. F. Outhit,	Kentville	100
Norman McDonald,	N. Big Bras d'Or.	110
Mrs. McDonald,	Big Bras d'Or	107
Malcolm McDonald,	Louisburg Road	100
Mrs. Margaret McDonald,	Loch Lomond	104
Mrs. Mary Ludkins,	now living at Portland, Me.	117
Henry Jackson,	Hampton	115
J. W. Croucher,	St. Margaret's Bay	101
Joseph Palmer,	River John	108
McMillan,	Catalone	101
Mrs. Daniel Whitman,	Annapolis	100
John Wynn,	Truro	103
A. Clark,	Middle Musquodoboit	100
Mrs. McLeod,	Mira Road, C. B.	100

A number of the above list are still living, and would therefore be a year or two older than here stated, as some of these notices were extracted two years ago. A case in point is that of John Wynn who would now be 105 years old, though some of his neighbors doubt his statement. There is every probability, however, that he is over 100, as he was one of the sailors on board the "Shannon," when that frigate towed the American frigate "Chesapeake" into Halifax harbor as a prize. It is a noteworthy coincidence that Sir Provo Wallis, senior admiral of the British fleet, the only other known survivor of this naval duel, is himself a Canadian—born in Halifax, and is now in his 97th year. The captain having been wounded, and the first lieutenant killed, the command of the vessel devolved on Sir Provo, then the young second lieutenant, who thus had the singular honor of bringing a captured warship into his native city. A writer * in a sketch of his life in the Halifax *Herald* says: "Sir Provo Wallis was born in Nova Scotia, and he is not a little proud of the province which has given us Beckwith, of Waterloo; Williams, of Kars; Inglis, of Lucknow; Watts and Belcher, of Arctic fame, and such lawyers as Judge Haliburton (Sam Slick) and Chief Justice Cochrane."

* Hon. S. L. Shannon, Halifax.

In addition to the foregoing list, the writer's correspondents mention the names of three other centenarians—Mrs. Emma Graves 100, Mrs. Letitia Green (colored), 117, Dorcas Hall, a maiden lady, 104—so that we have here noted 29 cases of people over 100 years in Nova Scotia alone, within three years. The united ages of these people make 3,004 years, or an average of over 103 years.*

Of the 512 before-mentioned people over 80 years old (nearly all of which are recorded in a single paper,—the Halifax *Herald*), † 152 were between the ages of 90 to 99. Dr. A. C. Pagé of Truro reports the names of 97 people over 80 years within the limits of his own practice, of whom 68 are now living and of whom the balance died during 1887-88. Of these 97 there were 16 from 90 to over 100 years of age. Mr. C. R. H. Starr, of Port Williams, reports 45 of 80 years and over, within the sphere of his own personal acquaintance, and of these 15 were from 90 to 117 years of age. Dr. Pagé has during the past 10 years been gathering a list of cases of longevity, and the results are remarkable. Of the lists sent, he writes: "With a few exceptions the names are those of parties who have lived in this county (Colchester), and only a small portion of it at that,—Truro, Onslow, and Brookfield furnish the majority. During the ten years I have recorded such instances, I have never searched for cases, but only recorded such as I met with in my daily work." To the cases collected by himself, Dr. Pagé adds many recorded in a book published by the late Thomas Miller as a "Historical and Genealogical Record" of the original "grantees" of the townships of Truro and Onslow, the latter of course extending over a long period of years back. Dr. Pagé gives in each case the name, address and date of death, and the total of his list is 316 of 80 years and over, and of these 64 were of ages ranging from 90 to 99 inclusive, and six were 100 and over. If to these we add his list of 68 living persons we would have 384 persons of over 80 years, living and dying in most cases in three townships, whose combined population at the last census was only 5,490. Noting the condition of the 68 living persons, Dr. Pagé appends the remark "active" to 48. That the word active

* Since this account was written Dr. J. R. Colley, of River John, N.S., reports the names of 21 persons who died at over 80 years within a radius of eight miles, two of these being over 100. He also gives the names of 29 still living within the same radius at over 80; two of these also being 100 years of age.

† The only other Nova Scotia paper the writer remembers receiving was the Truro *Sun* during 1888.

e possession of considerable vigor, we may infer from the to the name of John Wynn, before mentioned, he attaches "feeble," though this same John Wynn, when the writer m on a flying trip through Nova Scotia in the fall of 1887, larly at 5 to 6 in the morning, built the fires, cut and split ove wood, and did various "chores" about the house of his whom he lives, the family consisting of 6 or 7. The pro- ensus of Nova Scotia of 1851 showed the annual mortality per 1000, and that of 1861 14.1 per 1000. It would have ch less in the latter year, but for the extraordinary ravages heria, a disease but little understood in the province at e.

e case of New Brunswick the writer's exchange list ited to the *St. Croix Courier* and *Moncton Times*, and he last few months of 1888, the St. John *Daily Telegraph* ekly *Sun*. Nevertheless in the two years 1887-88, he noted ies of 232 people over 80 years. Of these 55 were the ages of 90 and 99 inclusive, and the following 22 were over:

Name.	Address.	Age.
rrissey	Carleton	109
ie	South-Richmond	102
rogan	Kouchibougnac	102
ner (name not stated)	York Co.	104
ing (Wid. George)	Millbranch, Weldford	103
ewart	St. Andrews	100
Chambers	Upham	102
s Driscoll	Lower Cove, St. John	103
W. White	of Passamaquoddy (d.at Newburyport, Mass.)	100
evelin	Hibernia, Central Hampstead	101
almer	near Sackville	*101
nteill	Gagetown (?) Queen's Co.	105
Morse	of Georgetown (d.at Portland, Me.)	104
phroisine Leger,	Shediac	101
nable Leger	Shediac	100
:Donald	Kouchibougnac Beach	102
ller	Richibucto	102
n Wright	Otnabog	101
n Dempsey	New-Bandor	102
ngleton	Renous River	† 108

ted by one report to be 110 in 1888.
iously stated at 108 to 115.

Name.	Address.	Age.
Joseph W. Moore	St John	101
Andrew Somerville	Hatfield's Point on St. John	100

Mr. J. E. B. McCready, of the St. John *Telegraph*, sends a list of 33 people of over 80 who have died within the last 35 years, within a radius of five miles of Penobsquis Station, N.B. The remarkable feature about this is that the district in question is thinly inhabited, comprising altogether less than 80 families. In nearly all cases the people were born in the neighborhood in which they died. Besides these deaths he notes the names of three yet living over 80 years, two of them being nonogenarians.

Mr. W. J. Gilbert, of Willow Farm, Dorchester, sends a list of 74 persons who had died at 80 years and over, or are still living at that period of life, these living all apparently in the parish of Dorchester. Of these 23 were from 90 to 99 years inclusive; and the following 5 were centenarians: Daniel Belliveau, 102 years, Peter Golin, 106, his wife 104, John Palmer (living) 100, John Webster (living) 102.

Mr. G. E. Fenety, in the course of an interesting lecture at Fredericton, in 1887, on "Longevity," cited the following facts:

There resided in the Parish of Botsford, Westmoreland, in this Province, at one time not long since: Mrs. Commo, aged 102 years; Adam Ames, 90; B. Henesy, 90; Adam Scott, 89; Mrs. Adam Scott, 87; Mrs. G. Dobson, 86; Stephen Trenholm, 86; Arch. Boyce, 86; William Wells, 85. Marang Girouard, of Kent County, is hale and hearty at 92. There were living in St. Andrews in 1879 (says the *Bay Pilot*) 23 persons of the following ages: 4 at 80; 4 at 81; 2 at 82; 1 at 83; 2 at 84; 2 at 85; 3 at 86; 2 at 87; 1 at 88; 1 at 91; 1 at 92. He mentions that in the Fredericton Almshouse in 1884 there were two persons over 80 years, and two over 90 years; that Col. Minchin, a native of Fredericton, died there at 100 years, and that Major Ward, of St. John, known as the "father" of that city, died at 94, leaving two sons, Charles and John, who lived to 93 years. Thus we have noted in New Brunswick, 28 persons of over 100 years.

Turning to Prince Edward Island, there were found in the Charlottetown *Examiner*, *Patriot and Herald*, and the Summerside *Journal* in the two years mentioned, 223 persons dying at over 80 years, of whom 49 were between 90 and 99 and the following four centenarians:

Name.	Address	Age.
Wm. Brazil,	Johnston's River, *	103
Donald Gillis,	Head of Montague,	101
Patrick Hanifen,	Campbellton, New-London,	100
Mrs. Mary McCormack,	Souris,	105

Though the number of centenarians is not large, the number of those over 80 years is remarkable, considering the total population of the island. These are only such obituary notices as appeared in the papers named, and do not of course represent anything like the total deaths of this age. Dr. R. MacNeill, of Stanley Bridge, gives the names of 13 people now living near that place at over 80 years (4 of them being over 90). He mentions 25 in all who were over 80, including recent deaths. Dr. E. B. Muttart, Souris, reports 39 persons living, and recently dead, at over 80 years, of whom 11 were 90 and over. He explains the list only refers to a section of King's County, and is not complete even for the section covered by his enquiries. He also mentions one centenarian, Mrs. Roderick McCormack, of Grand River, who died Oct., 1888, aged 104 years.

Dr. Richard Johnson, health officer of Charlottetown, reports the names, nationality and occupations of 34 people who died in that city between Nov., 1886, and Nov., 1888, at over 80 years of age. From June, 1883, to Nov., 1888, the number was 87 of whom 14 were over 90. These amounted to 8.89 per cent. of the whole mortality of Charlottetown for the entire period. Of these 87 the nationalities were: Irish 36, Scotch 28, English 19, African 2, Welsh 1, and German 1. Of the occupations, laborers and farmers who had retired from the surrounding neighborhood were the most numerous. Dr. Johnson's statistics were confined to the city proper. The writer was shown the photograph of a Mrs. Graham who died a few years since at Montrose, near Summerside, aged 111 years.

It would be useless to apply statistics so fragmentary and incomplete in comparing the longevity of the Maritime Provinces with that of other countries. The only cases in which the figures are at all complete are those reported by Drs. Page and Johnson, and there the longevity is very high, taking population into account. A venture at comparison may, however, be made with regard to centenarians. We have here 62 in the three provinces, but taking only the figures of the census of 1881, we have 1 centenarian to every 19,788 inhabitants; while in England at the census of 1841 (the only

* Died in Feb., 1889.

period for which the writer has the numbers of centenarians), there was only 1 centenarian to every 143,182 inhabitants; and in France in the period from 1820 to 1837 the average of centenarians dying annually was 1 to every 217,105 inhabitants. The actual annual number of centenarians was 152, while in the period from 1852 to 1860, it was only 111, though the population had increased twenty per cent. One authority reports that in a total European population of 212,940,376 (excepting Russia, Turkey, and some small Southern States) there were 3,108 over 100 years or 1 in 62,503 inhabitants. At the census of Massachusetts in 1885 when the population was 1,942,141, the number of centenarians was 43, or 1 to every 45,166 inhabitants. Making allowance for the increase of population, and taking away half of the 62 on account of the report being for two years, and further assuming that the lists given are complete for the three Provinces, the shewing is still remarkable. The census of 1881 showed the following facts regarding the Maritime Provinces:—

	Total Population	No. Over 80	No. Over 100
Nova Scotia	440,572	3,853	24
New-Brunswick	321,233	2,227	12
Pr. E. I.	108,891	883	8
Grand total	870,696	6,963	44

Having given such statistics as the writer could gather, he now mentions a few out of many cases brought before him that come under the head of

CURIOSITIES OF LONGEVITY

in the Maritime Provinces.

Dr. Page, Truro, mentions the following remarkable coincidence in the case of two old people on his list: "Miss Olive Fitch and her sister Mrs. Munro lived under the same roof all their lives, they died, and were buried on the same day, and in the same grave."

"One of the oldest families in Stanley Bridge" (P. E. I.), writes Dr. MacNeill, "is the Anderson family. The grandfather, Alex. Anderson, was born in Scotland, coming to Rustico in 1775 and died at the age of 79. His wife died aged 99. They had eleven children; Kitty died 93 years old, Robert 91, Charles 86, Christie (Mrs. Cousins) nearly 90; Duncan died in New-Zealand nearly 80, and the youngest George is now living and quite smart at 75."

Mr. Starr notes that the Hon. Samuel Chipman, of Cornwallis, is 98, still hale and hearty, and though he lost his sight two or three years ago, his memory is still good and intellect bright. He is said to be the oldest free-mason in the world, being initiated in 1817. Mrs. Edward Power died a few months ago aged 103. She was a farmer's wife, hard working, good tempered, christian woman, and the mother of a large family, of whom the oldest is still living at about 80. He also mentions that Mrs. Letitia Green, a colored woman, who died at 117, and Dorcas Hall, a maiden lady, who died at 104, both belonged to King's County, N. S.

Dr. Muttart, Souris, mentions that James Aitkin, of Bay Fortune, is in good health at 94, and his sister, who is 81, still attends to her household duties, and drives her own horse with as much skill as a young woman. He also mentions that living in one house at Grand River, are Daniel McLeod, his wife, and John McDonald, whose ages are 89, 90 and 92 respectively ; and William Ball of Georgetown, aged 94, can read the smallest print without glasses. He gives the names of over a dozen living in the neighborhood who are still engaged in their regular occupations, at between 80 and 90 years of age.

Norman McDonald, of Big Bras D'Or, Cape Breton, who died last year aged one hundred and ten years, was the last known survivor of Waterloo, he having fought in that battle when thirty-seven years of age. He was a man of great activity, and up to two years ago did considerable work on his little farm.

The Rev. J. S. Pattengill, Presbyterian clergyman at Cannonville, who has served in the ministry for nearly 50 years, furnishes some interesting statistics and observations relating to the increasing longevity in the rural districts. He has attended 573 funerals altogether since 1840. The average length of life of the first hundred dead whose funerals were attended was 26½ years, 7 of these having lived over 70 years ; of the second hundred the average was 36 years and 13 were over 70 years ; of the third hundred, the average was 37, and 20 were over 70 years old ; of the fourth hundred the average was 37, and 28 were over 70; of the fifth hundred the average was 37½, and 32 were over 70 ; and of the remaining 73 the average was 58, and 32 were over 70, the oldest of the 73 being the late Levi Hanford of Walton, who died at 96.

A correspondent of the Halifax *Herald* wrote last year: there died at South Berwick on Friday, the 9th of March, Mrs. Elizabeth Taylor, aged 107 years and six months. Mrs. Taylor has been through life a devout Christian. Her maiden name was Foster—a very long lived family. Mrs. Taylor's great grandmother was one hundred and six years old when she died. Her grandmother died when

she was ninety-six. Her father died at 96. Five years ago five of the family were living. The following are ages of four of them : Mrs. Taylor, 102 ; Benjamin Foster, father of Edward C. Foster, post-master, Berwick, 100 ; Samuel Foster, of Greenville, 98 ; Mrs. Susan Tupper of Aylesford, 96. This gives an average of 99 years to these four members of the Foster family. Philip Foster, of Berwick, the only survivor of the family, is now 88 years old. He is an active farmer. Mrs. Taylor was the mother of twelve children. John her oldest son, 81 years old, was a mourner at her funeral. He had taken care of his mother for nearly 30 years.

There lives at Phinney Mountain, a few miles from Hampton, in Nova Scotia, a colored man named Henry Jackson, who was born in Granville, in that province. He says that when the English fleet came to Annapolis he was a boy big enough to go on board and sell fish. This was the year 1783, and allowing him to be 10 years old at that time, he would now be 115 years old. He says he can remember when a neighbor named Thomas Walker was born, and Walker died last year at the age of 94. Mr. Jackson lost one eye ten years ago ; the other one is remarkably good. He is smart, able to cut his wood, and a man living near said he saw him chopping wood one of the cold days this winter.

There is at present a married couple in Truro, who had five of their six children married within a period of ten months, and who had six grandchildren born to them within period of seven months. From the date of the first marriage to that of the birth of the last child less than 21 months had elapsed.— *Truro Guardian.*

The deaths of Mrs. Jane Elder, aged 87, and James Taggart, sr., aged 90, who were among the first settlers of the Cascade Valley, Cumberland, N. S., were recently reported. It is a singular coincidence that the deceased were neighbors while living in Ireland, came to this country about the same time, have always lived as neighbors in this country, and died within three days of each other.

Rev. D. Sutherland, Gabarus, writes : " McMillan, of Catalone, C. B., a native of Lochmaddy, North Uist, Scotland, is 101 years of age ; and all his senses are as good as when he was in his teens. A few months ago he cut and sewed a pair of millcloth trousers for himself. Last autumn he mowed hay on the same field with his son, his grand-son and his great-grand-son, and his day's work was equal, it is said, to that of the best of them. He was 40 years of age before ever he saw tea, and 43 before he put a tobacco pipe in his mouth.

Mrs. Angus McDonald, sen., of West Merigonish, N. S., who recently died aged 78, had two brothers and a son Catholic priests, and had a bishop and four other priests within the second degree of relationship to herself.

The father and mother, brothers and sister, wife, and sons and daughters of Chas. Jacques, of Melvern Square, are all living. His grandsons, Edwin and Chas. Jacques, have now living, 1st, father and mother ; 2nd, four grandfathers and mothers ; 3rd four great-grandfathers and mothers ; 4th one great-great-grandfather, besides uncles, aunts, grand do., do., great-grand do., do., and one great great grand-aunt. The above were all born and reared in the counties of King and Annapolis.—*Bridgetown Monitor.*

Donald McNeil recently died at south side Boularderie, C. B., aged 87 years. He immigrated from Scotland in 1821—67 years ago. He raised a family of nine children, all of whom are living—the eldest son being 52 years of age. He also leaves a great number of grand children, and strange to say his is the first death which has occurred in the family since they arrived from Scotland.

Jacob Wright, jr., lives with his wife at South Vale, Upper Stewiacke. His father and mother and his uncle and aunt are members of his household. His father, Ephraim, and mother, Lucy, are respectively 86 and 85 years old. The uncle, Solomon, and aunt, wife of Solomon Wright, are each 82 years old. The ages of these four old people amount to 329 or over 82 years each. The Wrights are a long-lived family. The father of Ephraim and Solomon had five boys—and five only. They are all still alive. The eldest, Jacob, is now over 90, is hale and hearty, goes about his daily work, and bids fair to live for years to come. The youngest of the five is over 70 years old.

Mr. Alex. McCurdy, of Middle Musquodoboit, is in his 92nd year, but still hale and hearty, and independent of glasses in reading ordinary print. During the present haying season he has more than once mowed more than a ton of hay as a portion of his day's work. His children are all living, except one who died in early infancy, and their combined ages with his own aggregate 590 years. Mr. McCurdy was born in Onslow, Colchester county, during the wars of the French revolution, and has very distinct recollections of the incidents of the second American war. When a young man he removed to Musquodoboit, where he acted the part of a pioneer in clearing and cultivating the farm on which he has resided for 70 years. He has been contemporary with seven generations in his own family. Mr. McCurdy's memory extends back to his great-grandfather, born nearly a hundred years before Waterloo, while both "young Canada" and "young America" include a number of his great-grandchildren. For more than 50 years he has been an elder in the Presbyterian church.

Xavier Josse, an octogenarian, died at Descousse, Cape Breton, last year after a few days illness. His wife, about the same age, died next day, and both were buried in the same grave.

The total ages of six people who died within a week near Bridgwater are reported by the *Enterprise* to be 518 years, 10 months, their names being: Andrew Himmelman, New Dublin, 94 years; Mrs. Gabriel Seaboyer, Ritcey Cove, 91 years; Mrs. Magaret Oxner, relict of the late John Oxner, Ritcey Cove, 75 years; Mrs. Anna Baker, relict of the late Andrew Baker, Baker's Settlement, 95 years; John Peter Rafuse, Conquerall Bank, 92 years; and James Silver, Northfield, 71 years, 10 months.

The New Glasgow *Chronicle* recently gave the names and ages of fourteen persons living within three miles of that place, whose united ages were 1231 or an average of about 88 years each; and the Annapolis *Spectator* gave the names of eight living within that county, all of whom were over 90 and one over 100. The latter list was given as an incomplete one.

Mrs. W. B. Embree, of Amherst Shore, who died aged 79, leaving a husband aged 89, was the mother of 13 children, of whom 12 were living when she died. A singular coincidence was that her mother also bore 13 children, of whom 12 were left when she died; all of her own twelve living children are married and have families.

There are living at Lower Middleton 12 persons, within three-quarters of a mile of each other, whose united ages amount to 962 years. Also 6 persons within the same limit, who are upwards of 60 years old.

Mrs. Sarah Ross, who recently died at Margaree, aged 88 years, was the mother of 11 children, grandmother of 69, and great-grandmother of 56. Of this large number there are still living 10 children, 66 grandchildren, and 45 great-grandchildren.

There are five men living at the west of Cariboo, Pictou County, whose farms lie alongside one another, and the youngest of them is 77 years old, the eldest 83 years.

A recent issue of the Pictou *News* contained notices of the death of an aged couple named McIntosh, of Waugh's River, two days only intervening between the death of husband and wife. The husband was 77 years old, the wife 78. The same number contained the deaths of eight other individuals ranging from 60 to 87 years.

Deacon Isaac Dawson, of Dawson, N.B., who died aged 88, had 14 children, and had survived them all but three. He left, however, a large number of grand children and 45 great-grandchildren.

The age of Wm. Singleton, a very old resident of the Renous River, N.B. has been stated, by those who are supposed to know, to have been about 115 upon the plate of his coffin his age was placed at 108. The only data for arriving at this conclusion was the fact that Mr. Singleton took an active part in the rebellion of 1798 in Ireland, and had to flee, his escape being made in woman's clothing.

The following was from the Moncton *Times*: "We record the death at the residence of her son, John Ford, Coal Branch, Kent Co., of Phœbe, relict of the late John P. Ford, aged 95. There is now living with Mr. Ford, a maiden aunt Esther Townsend, aged 97 last September, and there is also living within two miles of Mr. Ford's place on the Coal Branch, Mrs. Geo. Irvine, born in Scotland, over 100 years of age. Mrs. Ford was born up the St. John River. Another statement gives Mrs. Ford's age as 103, and mentions that she had living at the time of her death 115 great-grandchilden. Her father lived 99 years and her grandfather 108.

The *Moniteur Acadien* is moved by the death of Joseph Boudreau, of Bathurst, aged 82 years and 9 months, to make mention of an Acadian settlement where, within a radius of three miles, reside 10 persons whose ages average 90 years. They are: Mrs. Amable Legere (widow), 99; Mrs. Pierre Boudreau (widow), 92; Mrs. Joseph Boudreau (widow), 90; Marguerite Gautreau, 87; Mrs. Moise Legere (widow), 88; Thos. Galland, 84; Placide Galland, 84; Mr

Thos. Boudreau (widow), 84; Placide Gautreau, 83; Etienne Gautreau, 82 years.

A recent issue of the Moncton *Transcript* had the following:—Mr. Morang Girouard, of Buctouche, was in town recently, and notwithstanding that he is 95 years of age, is still able to walk distances which would try the strength of many men half a century his junior. He states that he has used tobacco ever since his boyhood, and considers a day lost in which his bill-of fare does not include several glasses of strong liquor. Notwithstanding this, he has seldom or never been known to be intoxicated.

To-day is John Palmer's one hundredth birthday, he having been born on Oct. 11, 1788. Mr. Palmer served on the grand jury at the July circuit of the Supreme Court, and was sworn at the same time as his son, Alpheus, and grandson, F. C. Palmer (son of Alpheus). Mr. Palmer has had a large family of children, eight of whom are now living.—*Sackville Post, Oct.* 11, 1888.

Mr. William Kilburn, of Kilburn, Victoria Co., who has been ill for some time, was visited last week by his five brothers from the vicinity of Fredericton. There are six brothers, all living; death has not as yet broken the circle. The eldest is now 84, and the youngest 67; their average ages amount to 74 years, or a sum of 448 years.—*St. John Telegraph.*

The Woodstock, N. B., *Sentinel* recently gave the names of six persons living within an area of one mile near that town whose ages were as follows:—James P. Lockwood, 85th year; three sisters, Emily Smith, Nancy Peabody, and Christian Stokes, in their 90th, 89th and 87th years respectively; Maria Bull, 89th year, and W. D. Smith, 77th year—total 517 years.

Mrs. R. Gordon, of Cascumpec Village, P.E.I., who died a short time ago (aged 94 years) during the last twelve months, read over twice the New Testament and a book containing 42 sermons. She gave up the use of glasses some 30 years ago and could read ordinary print without any assistance of that kind. She was the mother of ten sturdy sons, of whom the late Rev. Donald Gordon, of Annapolis, N.S., was one.—*Summerside Pioneer.*

Our obituary columns contain a notice of the death of Mrs. Cornelius Mabey, in her 100th year; her maiden name was Sentner, a hardy old Dutch family whose members all live to a great age. Mrs. Mabey, when we saw her a few years since, was bustling about a little garden; she must have left numerous descendants, as we know that more than one of her great-grandchildren are married.—*Summerside Journal.*

A very remarkable group was recently photographed at Thomas Cook's gallery. It consisted of six brothers, whose united ages amounted to 465 years, or an average of 77½ years each, as follows:—Charles Stevenson, of Tignish, 86; John Stevenson, New Glasgow, 82; Andrew Stevenson, Fredericton, P.E.I., 80; William Stevenson, Fredericton, P.E.I., 77; George Stevenson, New Glasgow, 73; Robert Stevenson, Rustico, 67. They are all hale and hearty, being fine specimens of ripened manhood; with the exception of the two younger, they can all read without the use of spectacles. They are all members of the church of Christ on this Island, Charles and John being elders.—*Charlottetown Examiner.*

theson 72, Mary Coles 70. They were all in good health a
had been no death in the family.

A remarkable family gathering took place last year at th
of H. A. Beers, Murray River, P. E. I. It consisted of M
cas Beers and her thirteen children whose united ages w
years, and yet the mother was but 87, the eldest child b
and the youngest 43, Mrs. Beer's grandchildren were 65 liv
28 dead, great grandchildren 73 living and 4 dead.

There were last year residing in an area of one mile, ne
peque, P.E.I., six persons whose average ages were 83 years

Many other curious cases could be cited if space permitte

The question of the causes of this longevity is a difficult
answer. Several writers maintain that long life is chiefly a
of inheritance or of habits and circumstances rather than of
or locality; others maintain the influence of climate to b
It is certain that the habits of the people under the writer's
showed great diversity, and in many cases were the opposite
tends to long life; though whether, if these intemperate old
had lived abstemious lives, they would not have had man
years added to their lives is open to debate. Instead of
these questions just now, the writer will give the theories
of his correspondents.

Mr. W. J. Gilbert, Dorchester, is of opinion that longevit
to inheritance. "In one of the lists enclosed, the people ar
all related, and the same may be said of many towns and
throughout the province. The original stock were hardy ar

"The persons named were nearly all of the farming class, in comfortable circumstances but not wealthy—honest, industrious folk who kept busily employed. But few of them were totally abstemious in respect to liquor, though all were temperate.

"Exercise in open air, plain food and plenty of it, with good constitution, and an excellent climate were perhaps the main causes of longevity. I may add a great abundance of the best water from numerous natural flowing springs (instead of wells), and the undulating surface of the country affording capital natural drainage aided to this result."

Dr. A. F. Falconer, Sherbrooke, N.S., says: "Coarse diet, unplastered houses, open fire-places, and plenty of out-door exercise contribute to prolong life, and on the Atlantic coast the bracing east winds—to those who escape the bacillus of tuberculosis,—are a potent influence in the result. The absence of mental or moral excitement, and the occupation of the farmers and fishermen, who spend so much of their time in the open air, and when they come home regale themselves with a stimulant no stronger than milk, conduce to longevity. My grandfather was a hale and hearty man at 95, and but for an accident would, I doubt not, have celebrated his centennial year. The Hon. Mr. Cutler of this county died at 97, and Mrs. Mason at 104. All these were distinguished for their amiable disposition and regular lives." He adds that "fretfulness," bolting "food," late hours, and spending the first part of their lives to make the last miserable, carry off more people before they become octogenarians than war, and he concludes: "The quiet, orderly, christian lives of the inhabitants of the maritime Provinces will, added to the above reasons, account chiefly for their longevity." Mr. C. R. H. Starr is of the same opinion. Dr. McNeill, of Stanley Bridge, P.E.I., writing of his list of old people, says: "None of these people were total abstainers, but all were temperate in their habits." Dr. Pagé, of Truro, speaks of his constituents as "the descendants of the most hardy and robust of the English, Scotch and Irish pioneers of the country, who with an ancestry accustomed to toil, and unused to luxury or excesses, continued industrious, frugal and temperate. They were not wealthy nor poor, nor was their sleep disturbed by ambition for titles, wealth or honors. They were religious, and had implicit faith in the benevolence and goodness of God. "Owing to their being better housed and cared for, he believes a larger proportion now live to extreme old age than at any former period in the history of the province."

In conclusion, the writer wishes to thank the editors of the journals named, and the other gentlemen who have kindly afforded him information.

POST SCRIPT.

Since the foregoing has been placed in the printer's hands, the writer has received from Mr. S. Selden, founder of the *Christian Messenger*, Halifax, information relating to that city and facts furnished him for this work by several correspondents.

A gentleman from Grande Pré,—the historic settlement known to the world as the scene of Longfellow's "Evangeline,"—gives a list of 13 persons living within a mile and a half of his place—it being a rural district—all over 80 years of age; and he supplements this by a list of people within his own personal knowledge who have died in that vicinity since 1870. The total is 96, of whom 21 were between 90 and 99 inclusive and three 100 and over. Hon. Samuel Creelman sends him a list of 15 who died within the last two years at over 80, and 20 who are now living at that period in the Upper Stewiacke, this list being made from memory. Judge Desbrisay, writing from Bridgewater, furnishes him with a list of 62 who have died there at over 80 years during the past two years, these being also gathered apparently from memory. Of these 18 were from 90 to 99 inclusive, and two over 100. He mentions the case of the family of John Morash, of Lunenburg; this family consists of eight, whose names he gives, and their united age are 656 years or an average 82 years. The family consists of five sisters and three brothers, nearly all of whom are, apparently, still living. Mrs. Kaulbach, one of the centenarians he names, was mother of the late sheriff, and grandmother of Senator Kaulbach. She died at 102, and when she attained her centenary had 119 living descendants, besides 44 who had gone before her. On her 101st birthday she took a sleigh drive and dined with her son John Creighton. Her brother Valentine Zwicker died at over 98. Judge Desbrisay mentions that he saw a photograph of a family group in which five generations were represented.

Mr. Selden attributes the healthfulness of his province to its proximity to the sea, its undulating surface and good drainage, a comparatively even temperature, and less anxiety in the lives of the people. In the course of his letter he says:—

"I much regret that we have no published reports of the vital statistics of Nova Scotia since July, 1877. From 1863 to 1877 we had a comparatively efficient system, but it was then suspended by the Dominion Government closing the central office in Halifax, although it was sustained by the Dominion from the Confederation of the Provinces to that date. The claim was recognized on account of its being in operation when the Confederation was carried into effect in 1867. Some facts, given in the few years previous to 1877, will shew that the statements respecting the healthfulness of our climate are based on unquestioned facts. The ninth annual Report of the Secretary of Statistics for 1874 states that in Nova Scotia the deaths are probably in the ratio of 1 to 58 or 60 of the population. According to the returns of 1871, the deaths are given to population in the proportion of 1 to 83. This is equal to 12 deaths in each 1000 persons, or 1 23 in 100. In Scotland there is 1 death to each 42 of the population, or 21.07 deaths in every 1000. In England the ratio of deaths to population is about 1 in 45 or 22.40 in each 1000 or 2.24 in 100. The annual rate of mortality in Massachusetts is about 1 in 54, or 19.17 in 1000, or 1.91 in 100 persons. The number of deaths registered in Nova Scotia in 1874 was 4,730, of these 2527 were males and 2203 females. There were thus 114 deaths of males to 100 deaths of females. In England the proportion is 106 male to 100 female deaths. This ratio has been maintained with wonderful regularity for a series of years. In Nova Scotia during the years 1874, 27 per cent., or 27 children in each 100 died under 5 years of age. In Scotland 38 children in each 100 died before completing their fifth year, 42 in England and 34 in Massachusetts. It will therefore be observed that the infant mortality of this province during the first five years of life is 11 per cent. less than that of Scotland, 15 per cent. less than that of England, and 7 per cent. less than that of Massachusetts.

"Of the aged persons who died during the year, of the 2527 males, 2 were above 100 years, and of the females 9 were more than 100 years. One of the latter was stated to be 104 years; 180 men and 167 women were upwards of 80 years of age, and 40 men and 29 women were between 90 and 100 years of age.

"We have no reason to suppose that the year 1874 was in any respect an exceptional year. Indeed the percentage of deaths in the Military station of Halifax, it has long been known, is less than in any of the stations of the British Army in the world."

SABLE ISLAND.

Lying about 100 miles off the east coast of Nova Scotia, and territorially connected with the province, lies Sable Island. It is one of the marvels of the Atlantic, inasmuch as it is known to be both diminishing in size and shifting in its position in the sea. It was built by accumulations of sand from the action of two opposing ocean currents, and the subsequent changes in these currents with the action of the Atlantic gales will account for its recent changes and impending dissolution. When first known it was 40 miles long by 2½ wide, now it is 22 miles long by 1 wide, and many believe it will entirely disappear. It has been the scene of so many wrecks that it has became known as the "ocean graveyard." Its history it not without romance. It was first colonized by convicts. They were brought in 1598 by the Marquis de la Roche, vice-roy of Canada and Acadia, who left them on the island till he could fix a settlement on the mainland. In returning he was caught in a gale, driven to the coast of France, and wrecked, and thrown into prison. The convicts remained on the island, living upon wild fruits and the wild cattle, which along with wild horses and wild hogs inhabited the sand hills, having probably been brought there by the Portuguese who had visited the island many years before. Seals also frequented the island and served them as food and clothing. Feuds, murders and sickness diminished their numbers, and when, years after, De la Roche returned from prison to take them home, they had become like wild men, with hair growing over their bodies, nails like bird's claws and their beards grown down to their waists. Only twelve of them were left, and upon these the king, before whom they were brought, bestowed some money, and pardoned. The Dominion Government maintains a lighthouse and light saving station on the island. During the past twenty years the lighthouses and buildings have been swept away time after time by the abrading waves and tides combined, or by the gales which often sweep away the sides of the sandhills. Areas 30 or 40 feet wide and two to five miles long have been swept away in a single night on more than one occasion, and the highest part of the island which was once 200 feet is now only 80 feet above the sea.



SECTION II.

NOVA SCOTIA.



NOVA SCOTIA.

GOVERNMENT AND LEGISLATURE,

DECEMBER, 1888.

LIEUTENANT-GOVERNOR:

The Hon. Archibald Woodbury McLelan, *Member of the Privy Council of Canada.*

EXECUTIVE COUNCIL:

The Hon. William S. Fielding, *Premier and Provincial Secretary.*
" J. Wilberforce Longley, *Attorney General.*
" Charles E. Church, *Commissioner Public Works and Mines.*
" Thomas Johnson, without portfolio.
" Daniel McNeil, " "
" Angus Macgillivray," "
" Duncan C. Fraser, " "

LEGISLATIVE COUNCIL:

The Hon. Robert Boak, *President.*
" John McKinnon.
" Samuel Creelman.
" Daniel McN. Parker, M. D.
" Edwin R. Oakes.
" James Butler.
" Loran E. Baker.
" Charles M. Francheville.
" David McCurdy.
" Hiram Black.
" Samuel Locke.
" William H. Owen.
" George Whitman.
" Monson H. Goudge.
" Isidore LeBlanc.
" Thos. L. Lodge.
" John McNeil.
" William H. Ray.
" Duncan C. Fraser.



HOUSE OF ASSEMBLY:

Annapolis County	.....	Hon. J. Wilberforce Longley.
" "	.....	Frank Andrews.
Antigonish "	.....	Hon. Angus Macgillivray.
" "	.....	Colin F. McIsaac.
Cape Breton "	.....	Colin Chisholm.
" "	.....	Wm. McKay, M. D.
Colchester "	.....	George Clark.
" "	.....	F. A. Laurence.
Cumberland "	.....	Thos. R. Black.
" "	.....	Richard L. Black.
Digby "	.....	J. S. McNeill.
" "	.....	H. M. Robichau.
Guysboro "	.....	O. S. Weeks.
" "	.....	Jas. A. Fraser.
Halifax "	.....	Hon. W. S. Fielding.
" "	.....	Hon. M. J. Power (Speaker.)
" "	.....	William Roche.
Hants "	.....	Allan Haley.
" "	.....	Archibald Frame.
Inverness "	.....	Hon. Daniel McNeil.
" "	.....	John McKinnon.
Kings "	.....	Leander Rand.
" "	.....	Wm. C. Bill.
Lunenburg "	.....	Hon. Charles E. Church.
" "	.....	
Pictou "	.....	C. H. Munro, M. D.
" "	.....	William Cameron.
" "	.....	Jeffrey McColl.
Queens "	.....	J. H. Cook.
" "	.....	A. M. Hemeon.
Richmond "	.....	D. A. Hearn.
" "	.....	Joseph Matheson.
Shelburne "	.....	Hon. Thos. Johnson.
" "	.....	William F. MacCoy.
Victoria "	.....	John A. Fraser.
" "	.....	J. L. Bethune, M. D.
Yarmouth "	.....	Albert Gayton.
" "	.....	William Law.

NOVA SCOTIA.

In the compilation of a work of this kind, it is not necessary to attempt anything in the shape of a historical sketch, however brief. The purpose of this work is to present within moderate limits a fair and honest view of the industrial resources of the Province, and the advantages it offers to those who are looking for a field of labor in which they may better their condition. The natural capabilities of Nova Scotia are of such a character that her sons are justified in speaking of them in the language of eulogy. The climate is bracing and healthy in the highest degree, the soil is fertile, the scenery varied and attractive. The mineral resources are practically inexhaustible, and the richness of our coast fisheries has made the Province the envy of North America. Nova Scotia has a popular form of government, an active, peaceful and intelligent population, a first class educational system, which embraces within its folds all ranks and classes, and ensures the humblest child in the land the rudiments of a sound education. All the various divisions and sub-divisions of the great Christian family are represented within its borders, and dwell together in peace and harmony. With free and popular institutions, and blessed by nature in the most bountiful manner, Nova Scotia offers to the deserving and industrious a most inviting sphere for the accumulation of wealth and the enjoyment of health and happiness. The statistical information in this work is altogether taken from official sources, and is therefore trustworthy.

AGRICULTURAL RESOURCES.

Professor W. Fream, of the Downton (Salisbury) College of Agriculture, an eminent authority, visited the Province in 1885, and prepared a most interesting and valuable paper, from which I shall quote very largely in describing the agricultural resources of the Province. But perhaps before doing so, it may be as well to preface that part of the subject, and indeed the whole matter, by a general statement, showing the position of Nova Scotia on the globe, and giving an idea of its physical features.



Nova Scotia is a peninsula on the Atlantic coast of America, form a Province of the Dominion of Canada. It is situated between 43° 47° north latitude and 60° and 67° west longitude. It is connec with the Province of New Brunswick by an isthmus about 14 m wide. It covers an area about 300 miles in length, by 80 to 1 miles in width. The adjacent island of Cape Breton, which is a p of the Province, is separated from Nova Scotia by a narrow chan called the Strait of Canso. The Province contains over thirte millions of acres, of which nearly one-fifth part consists of lak and streams. A line of water-parting extends lengthwise throug the middle of the peninsula. Most of the land on the eastern or Atlanti side of the water shed is underlaid by hard Cambrian rocks that d not weather into very fertile soils. The western half is composed o silurian and carboniferous strata, which disintegrate into a muc better soil, and the land in the south-west, along the Annapolis valle and around the Basin of Minas, possesses remarkable fertility. Lar portions of the Province are covered with drift hills that furnish de loamy soils.

The fertility of the western portions of the country is not enti of local origin, for much of the soil along the Bay of Fundy con of rich marine alluvium. The configuration of this body is such it presents southwards to the open ocean two coast lines, the Nova Scotia and the mainland converging toward each other acute angle; consequently, when the north flowing tidal wave the bay, it finds its lateral extension gradually contracted, and waters get *piled up*. When the tidal undulation meets with the ance of converging masses of land and a shallowing botto heaped up, sometimes, as in the Bay of Fundy, to a height of and rushes along as a great wave or surging and foamin river. The tides of the Bay of Fundy spread themse over the adjacent shores, and have there deposited marsh inexhaustible richness. In some of these saline swamps ma grows abundantly and yields a heavy crop. But large ar salt marshes have been reclaimed by means of mud dykes, to prevent the irruption of the tidal water, and these dyke stitute an interesting and peculiar feature along the Bay around the Basin of Minas, and on the adjacent sho Brunswick. The earthern dykes are strong and broad, feet high, and the land within them is firm and dry, and great abundance of coarse but nutritious grass. Year a



e reclaimed marsh lands give upwards of two tons of hay per , and show no signs of running out, though they may become dy. Should this happen it is the practice to plow up portions at rvals of ten years or so, and to take a crop of wheat or oats, after ich new grass seeds are sown. *Most* of the upland farms in the tricts around the Bay of Fundy have some of these useful bottom ke lands attached, and it is estimated that the latter extend over area of some 70,000 acres. The cost of reclaiming and dyking ese salt marshes varies between $7 and $20 per acre. The system cultivation involves surface draining by cutting ditches twenty-o yards apart, three feet wide at the top, two feet nine inches ep, and sloping to a width of one foot at the bottom. Three or four ars subsequently the land is plowed in ridges of six to eight feet ide, sown with oats, and seeded down with timothy grass and lovers.

Between 1860 and 1870 the weevil was so destructive to the wheat rops that the cultivation of wheat was almost abandoned; but with reater care and better methods it has since been resumed, and the otal yield increased from 300,000 bushels in 1851 to 530,000 bushels n 1881; potatoes in the same time from 2,000,000 bushels to 7,500,000 ushels, and hay from 300,000 tons to 600,000 tons.

The following figures are from the census returns of 1881:

LAND.

	Acres.
Occupied	5,396,382
Improved	1,880,644
Under crop and pasture	1,859,020
Orchards and gardens	21,624

NUMBER OF LIVE STOCK.

Horses	46,044
Colts	11,123
Working oxen	33,275
Milch cows	137,639
Other horned cattle	154,689
Sheep	377,801
Swine	47,256
Wool sold	1,142,440 lbs.

FIELD PRODUCTS.

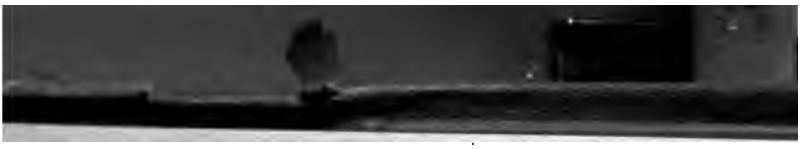
	Bushels.
Wheat	529,251
Barley	228,748
Oats	1,873,113
Peas and Beans	37,220
Buckwheat	339,718
Indian Corn	13,532
Potatoes	7,378,387
Turnips	4,006,711
Other roots	326,143
Clover seed	8,128
Rye	47,567
	Tons.
Hay	597,736

The average yield of crops in the western counties of the Province are, in bushels per acre:—

Wheat	18
Barley	35
Oats	34
Rye	21
Maize	42
Buckwheat	33
Beans	22
Turnips	420
Potatoes	250
Mangolds	500

The average yield of hay is two tons, but dyke lands in good condition, and upland fields well cared for, often give a much larger crop: as much as four tons per acre of timothy grass and clover have been secured in some cases, and followed by fair aftermath. In Hants and King counties, and in the counties of Annapolis and Cumberland, enormous yields of cultivated grass and of salt grass have been taken off the dyke lands and marshes.

"Nova Scotia is pre-eminently a grazing country," says Professor Fream, "and though the agricultural societies have effected some good there is still much room for improvement in the quality of live stock, both of sheep and cattle. As will be seen from the census



urns of 1881, there were owned in Nova Scotia that year 325,000 tle and 337,000 sheep, of which 63,000 cattle and 151,000 sheep re sold for consumption. The nearness to the seaboard gives to e stock farmers of Nova Scotia an enormous advantage over their rethren in Ontario and farther west, in so far as the export cattle ade is concerned. In all parts of the province they are within one r two days' journey of Halifax, the port of shipment. Many of the best farms are within a few hours' rail of the port. There is no wearisome overland traveling for the cattle, with its lowering of condition and waste of tissue, for the animals can be aboard the steamers either the same day or the day after leaving the farm, and Halifax is nearer than Montreal to Liverpool by 200 miles. The climate of Nova Scotia is more an insular than a continental one, and this is an advantage to a grazing country. Sheep along the shore and on the Islands in the south-western part of the province where they have access to sea weed remain out all through the winter. The port of Halifax is open all the year round."

When Professor Fream wrote the article from which we have been quoting, he complained that although there were five degree-conferring colleges in the province, there was no provision for technical instruction in agriculture. This complaint does not hold good now, as a Chair of Agriculture has been established in connection with the Normal School, and arrangements have been made for an experimental farm in connection with agricultural and dairy teaching.

As a fruit-growing country, Nova Scotia takes high rank, and in the matter of apples has no superior. The Annapolis valley is one of the finest apple growing regions in the world; its fertile soil and *sheltered* position admirably fitting it to this industry. Some idea of the variety of this delicious fruit may be gained from the following, copied from the report of the Apple and Pear Congress, held at Edinburgh in November, 1885:

"*Observations.*—A superb collection of apples grown in Nova Scotia, containing numerous samples of large, handsomely-shaped and beautifully-colored fruit, clear in the skin, of the finest quality and very accurately named. Among the most notable specimens are grand examples of the following: Blenheim Pippin, Cabashea, Fallawater, Gloria Mundi, Gravenstein, Cox's Orange Pippin, Hoary Morning, Baldwin, Fameuse, Mammoth Russet, Chebucto Beauty, Northern Spy, King of Tompkins County, Peck's Pleasant, Mother Apple, Cayuga, Bigelow, Golden Russet, Jewett's Fine Red, Herefordshire



Pearmain, Golden Pippin, Holly, Hubbardston, King of the Pippins, Golden Nonpareil, Washington Strawberry, Wagner, Ben Davis, Pewaukee, Seek No Farther, Ribston Pippin, Autumn Pearmain, Vandevere, Belleflower, Snow Apple, Broodwell, Emperor Alexander, Dutch Codlin, Blue Pearmain, Canada Reinette, Mic-Mac Codlin, Fall Pippin, Willoughby, Franklin's Golden Pippin, Gladys, Cooper's Russet, Dutch Pearmain, Chipman, Talman Sweet, St. Lawrence, Willow Twig, Rymer, Esopus, Spitzenburg, Calkin's Pippin, Hog Island Sweet, Fox Pippin, Maiden's Blush, Maun, Roxbury Russet, Nonpareil, Harris, Flat Pippin, Margaret's Pippin, Harvey Newark King, Rhode Island Greening, Golden Ball, Pommegris, Minister, Queen Charlotte, Morton's Red, Ohio Nonpareil, Hunt's Russet, and Gilliflower."

The collection thus described was exhibited by the Provincial Government, the samples having been collected in the field-orchards of the counties of Annapolis and Kings. In forwarding the collection, Professor Lawson, the Nova Scotia Secretary of Agriculture, said: "The collection of apples sent to the Congress has been selected as fairly representative of the produce of Nova Scotia. It embraces good specimens of all our market apples that can be obtained at the present time, as well as a number of other varieties which are likely to be of interest at the Congress. The fruit has all been grown on the free stock as standard trees and generally in orchards. Apples on the Paradise or other dwarfing stocks are not grown to any extent, and pears as bushes on the quince stock have not, with a few exceptions, proved either profitable or a success in Nova Scotia." The report says of the collection that it contained many splendid specimens of famed American apples, and some remarkably fine fruit of a few popular British varieties. All were carefully labelled and packed, and arrived in first-rate condition, where they formed at Edinburgh one of the most striking and interesting features of the Congress amongst a remarkably fine display of British apples and pears. The distinguishing characteristics of the Nova Scotian apples were their brilliant and beautiful colors, smooth outline, handsome shape and generally large size, and the high quality of the desert varieties, which was specially noticeable in such favorite British apples as Ribston Pippin, Cox's Orange Pippin, Golden Pippin, Blenheim Pippin, King of the Pippins, and Nonpareil.

In the western section of this province, especially in the county of Digby, cherries are extensively and profitably grown, and grapes are

cultivated in gardens in the open air. All varieties of small fruits, such as currants, gooseberries, strawberries, raspberries, blackberries, quinces, &c., grow freely with ordinary cultivation, and there is an abundance of wild fruit; blueberries on the barrens, huckleberries, blackberries, strawberries, raspberries, &c., in the pastures and woods, and cranberries, bakeberries, snowberries, and bogberries in the swamps.

Professor Saunders, manager of the Dominion Experimental Farms, in addressing the Fruit Growers' Association of Nova Scotia, said :—

"In Nova Scotia you have some of the finest apple orchards in the Dominion. Indeed, I know of no locality where trees bear so abundantly and continuously as in your own favored Annapolis valley, and I am convinced that you owe much of the success which has been achieved here to the efforts of your Fruit Growers' Association. Through the agency of this organization, wisely aided by your Local Government, much useful information has been disseminated as to the best and most profitable varieties to cultivate, and excellent markets found for your surplus. Apple production in this beautiful valley might be increased to any reasonable extent with profit. Pears also, and cherries, might be made a profitable industry. The Bear River district is noted for its cherry orchards, and I see no reason why the cultivation of this valuable fruit might not be indefinitely increased in your favored Province. Plums, I am told, grow well here, and not only in this valley, but in many other parts of Nova Scotia, including Cape Breton. With increased push and enterprise, there is a great future for Nova Scotia in this respect, and the success you have reached is only a foretaste of that which awaits you."

Dr. Chipman, speaking of the fruit product of one of the counties of this Province (Kings) in the year 1886, says :—

"The *Real Estate Gazette* places the figures at 70,000 barrels, of which 20,000 were Gravensteins. If we add to this estimate 30,000 we shall still be on the safe side. And for these 100,000 a net price of $1.50 per barrel will come within the mark, making $150,000 received by the fruit-growers of Kings for the crop of 1886. How does this compare with the potato crop? In 1885, 230,000 bushels were shipped. And for 1886 we shall place the shipment at 300,000 bushels, and 30 cents a bushel gives $90,000 to our farmers, or $60,000 less than our orchards. We must also credit the orchard with 20 cents a barrel, or $20,000 paid the coopers in the country, bringing the total receipts up to $170,000. Let us add the $90,000



for potatoes, and we have $260,000 received by our farmers for only two of their crops. And this money has not gone into the pockets of the rich. Every household in the county has received a share; for every acre of upland will raise potatoes, and as fine apples as ever the sun shone on. There is scarcely a homestead now without its apple trees growing around it. And they grow and bear fine fruit whether planted on the sandy plains of Aylesford, the light sandy loam of West Cornwallis, the richer deep loam of East Cornwallis and Horton, or the clayey soil of Lower Horton; and they grow and yield equally well in the western part of the county, where the sun heats up the sandy soil, and there is not a breath from the salt water, or along the banks of the Cornwallis and Avon rivers, and on the shores of the Basin of Minas, exposed to the cool salty wind from the water. I believe, however, the fruit ripens and colors up earlier in the season in the western part of the county."

THE DAIRY INDUSTRY

is not an unimportant one in Nova Scotia at present, but promises to rise to greater prominence in the future. To understand its position it is necessary to refer to the industrial conditions of the country. Many of the people depend more upon mining, fishing and forest products than upon wheat and cattle raising, which are great industries in the west. In some counties of Nova Scotia, the farmers find fruit raising most attractive and profitable; in the eastern parts beef raising for export to Newfoundland and elsewhere, is remunerative; and throughout the Province generally butter making, and to a less extent cheese making, is engaged in. Thus the occupations of the people of Nova Scotia are more diverse than those of the other Provinces, large numbers being engaged in lumbering, shipbuilding and the fisheries. No inconsiderable portion find remunerative employment in the coal and gold mines, and the quarries of gypsum, grindstone and sandstone. So large a number of the people being engaged in other than agricultural pursuits, there is a home market for country produce which prevents the dairy and other farm products from obtaining as much attention in foreign markets at present as they are likely to command in the future. Notwithstanding the diversity of industries in Nova Scotia, dairy farming is carried out to a greater or less extent, and with greater or less success, throughout the whole country, and not alone by the class who are properly styled farmers, for many of the fishermen and lumbermen, who can only ply their vocation during a portion

of the year, have small farms by which they are enabled to supply at least their own domestic wants in the way of milk, butter, cheese, pork, poultry and other produce. The possession of land and one or more cows by the lumberman and fisherman generally throughout the Province, although it does not make any show in the exports, forms a very important factor in the real wealth of the country and the comfort of the people, who have thus, even in the most adverse of seasons, the means of healthy subsistence.

In Nova Scotia the rural population never want for the necessaries of life.

Where the attention is divided between different occupations, we are not to expect the best methods of cultivation, the most improved implements, the finest live stock, or rapid progress in the adoption of new processes. Accordingly, in many parts of the country, especially in the shore counties, there is much room for improvement, much poor cultivation, and imperfect management of dairy stock. Where holdings are small and scattered, the improvement of live stock is especially difficult, as it is not profitable (even if it were practicable) for a fisherman-farmer to purchase an expensive male animal, and the distance of neighbors prevents combination for this purpose. It is otherwise in many inland localities, where farming is the exclusive and principal pursuit, and particularly around the bays and estuaries where rich dyke lands have been reclaimed from the sea, or where extensive deposits of marine marsh-mud prevail. Under such circumstances, agriculture is conducted on a larger scale and in a more systematic manner, the newest improvements in implements are introduced, and attention is specially given to the character and management of the live stock. The dykes, under proper management, yield crops of timothy hay (Phleum pratense) of from two to three or more tons per acre, which supply feed for the winter, and the "after-grass" furnishes, during the autumn months, an abundant and rich pasturage, which greatly promotes the flow of milk. The marine marsh-mud and mussel-mud are used for spreading on the uplands, and are found to be very efficacious, not only in promoting the growth of grass for hay, but also in yielding large crops of potatoes and other roots. The cultivation of grain, and especially of wheat, has for many years been rather neglected on account of the markets being filled with flour and grain at low prices from Ontario and the western States, but within the last year or two farmers have become more alive to the importance of grain growing in a regular

system of husbandry, oats and buckweat being most profitable. From these explanations it will be seen that the Nova Scotia farmer cannot avail himself of straw and grain cleanings, which are so useful as winter feed to dairy stock in essentially grain growing countries, but the abundant crops of hay and the excellent pasturage throughout the whole summer and autumn months make up for the deficiency, and specially indicate an adaptability of the country for dairy farming. Turnips and mangolds thrive well in all parts of the country, and there is a tendency to increase in their cultivation, the chief obstacles apparently being the expense of summer labor, and the want in some districts of manual skill in hoeing.

We have no reliable statistics of the dairy produce of Nova Scotia since 1881, when the general census was taken. It is certain that there has been a steady increase in all such products, as well as in all the field products of the country since that year. The quantity of butter produced in 1881 was upwards of seven millions of pounds (7,465,285 lbs.), and in the previous census year (1871) it was 716,867 lbs. The production of New Brunswick during the same year was nearly a third less, the exact quantity being 5,115,947 lbs. Analyzing the returns of the several counties of Nova Scotia we find that the smallest quantity was produced by Queens, one of the Atlantic shore counties, viz., 132,433 lbs.; the largest by Pictou county, which bounds on the Gulf shore, opposite Prince Edward Island, 804,661 lbs. A large portion of the inhabitants of Pictou county are of Scotch descent.

The quantity of home-made cheese produced in the Province of Nova Scotia in the year 1881 was 501,650 lbs., a decrease on that of 1871, which was 884,853 lbs.; the quantity made in New Brunswick in the same year being not much more than a sixth of that amount, viz., 154,758 lbs. The principal cheese county in Nova Scotia has been Annapolis, but cheese factories have been established also in Colchester and Antigonish, promising great extension of this manufacture. Halifax, a very large county, which embraces the city of Halifax, the great local mart for all produce, manufactures only a very small quantity of cheese, most of which is made in the eastern division of the county. No doubt the quantity of home-made cheese is less now than formerly. But the total amount of cheese produced in the country must be greatly in excess of the records of the census years, for within the last ten or twelve years cheese factories have been established in several counties.



The cheese factories are usually light wooden structures, with appliances sufficient for working up the milk of two or three hundred cows. The milk is brought by the farmers, or by special carriers, an account of its weight kept, and it is paid for at a rate proportionate to the profits of the factory, or market value of the cheese produced.

Although all these factories are worked on a more or less co-operative system, experience has introduced variations in the business management in different localities. The whey is used for the fattening of pigs, and may be carted home in casks to the farms, or the farmer may send his pigs (limited in number to the quantity of milk he supplies) to the factory, where there are pens furnished with troughs, into which the whey is conducted as it drains away from the curd vats.

The common cattle of Nova Scotia vary much in size and appearance in different districts, and even in the same district, although they are commonly spoken of as the "native breed." They are rather distinguished for their hardiness and suitability for rough pastures than for size or beef qualities, yet many of them are excellent milkers. As compared with the cattle of other countries, they are very healthy. For fifty years or more Guernsey stock has been in use in the neighborhood of Halifax; and the male calves of the Guernsey cows, sent year by year from the city to various parts of the country, have improved the milking qualities of the cows in many districts. Cows are frequently found giving exceptionally large yields of milk, or milk of remarkable richness, well adapted for butter making, and in such cases it is usually found, on enquiry, that they have inherited some Guernsey, Jersey, or Ayrshire blood. Within the last twelve years the improvement of the neat stock has been systematic and rapid. Commencing with the year 1866, the Board of Agriculture, acting under the Government, made regular importations of thoroughbred stock to supply the wants of the various Agricultural societies. Ayrshires have been imported from Scotland and from the Canadian Provinces of Quebec and Ontario, Devons and Short Horns from England and Ontario, Jerseys from the United States. Twenty-four years ago there was not a single animal with a known registered pedigree in Nova Scotia, although many thoroughbreds had previously been introduced for the improvement of the stock of the Province. Now there are nearly two thousand pedigrees recorded in the official register of the Province, besides many animals owned here whose

records are to be found in the several Herd Books of England, Can and the United States:

Nova Scotia Cattle.		Number Registered
Short Horn:	Cows	305
	Bulls	381
Ayrshire:	Cows	304
	Bulls	261
Jersey:	Cows	276
	Bulls	180
Devon:	Cows	61
	Bulls	27
Polled Angus:	Cows	27
	Bulls	15
Guernsey:	Cows	11
	Bulls	12
Hereford:	Cows	3
Galloway:	Cows	2
	Bulls	2
Holstein:	Bull	1

The Holsteins are mostly registered in the American Register.

As the herds of thoroughbred animals are being rapidly swoll not only by natural increase, but by yearly or more frequent im tations from abroad, and there are at present hardly any export this class of stock, it will be obvious that the domestic animals Nova Scotia must be very rapidly undergoing change. There nearly a hundred Agricultural Societies spread over the eight counties, and every society is enjoined to maintain a certain num of bulls (proportionate to the financial ability of the society) for improvement of the stock in the district. In this way it is hop before very many years, to effect a complete change in the charac of the live stock of the whole Province. In such Agricultural d tricts, where the raising of cattle for beef is a principal object, Shorthorns are chiefly in favor, and grade oxen of this breed are n becoming common. More recently Polled Angus, Galloways a



Herefords have come into use. Where cattle are used for working as well as for beef, the Devons are to be preferred. In the dairy districts the preference for Jerseys and Ayrshires has been very decided, and now the Holsteins are attracting attention, some five herds having been formed. Pure or grade Ayrshires are found most useful for cheese making, while the admixture of Jersey or Guernsey blood increases the proportion of cream and capacity of the milk for rich butter making.

The country is naturally adapted for dairy farming. Should the spirit now evoked continue it may be expected that before many years the butter and cheese produced on the rich pastures of this cool, healthy country will make their mark in the markets of Europe and America, as the unrivalled fruit of the extensive apple orchards has already done.

It has indeed long been a matter of regret to those who have been looking for improvements in our agricultural industries, that butter making has not assumed greater prominence in this Province. In many other countries there is want of pasture, or the summers are too hot, or the hand-labor cannot be spared from other employments, or the horned cattle are not of kinds suited for dairy purposes, or the rail carriage to seaboard and middlemen eat up the profits. It is far otherwise in Nova Scotia. Here we have immense stretches of land merely waiting to be made into fertile pastures; summers at once warm enough to keep the grass always growing, and cool enough for butter making; our live stock has of late years had constant accession of butter blood—Jersey, Ayrshire, Holstein—so that suitable cows can now be had in every part of the Province; and, lastly, our Province forms the natural wharf of the Dominion, whence our butter tubs may be floated into every market harbor of the world. If our farmers could only be made to see the immense advantages they enjoy for the profitable prosecution of dairy industries in Nova Scotia, the production of butter, and cheese also, would rapidly assume gigantic proportions.

With a view to the improvement of the horses of the Province, especially of the classes likely to prove profitable to farmers, bonuses of ten per cent are given, under suitable regulations, to encourage the importation and keeping in the Province of Percherons, Clydesdales, and other suitable breeds. Special attention is also given, in the offering of prizes for horses of improved breed at the Provincial and County Exhibitions, held throughout the Province.

No. 1.—Acreage of Land under certain Crops, and total produce of these Crops in the Province of Nova Scotia in each of the years.

	Year.	Wheat.	Barley.	Oats.	Maize.	Potatoes.	Rye.	Peas and Beans.	Buckwheat.	Turnips.	Other Roots.	Hay, (tons.)	Grass and Clover Seed.	Flax Seed.
ACREAGE ...	1851	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1861	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1871	19,299	.....	.....	.....	52,588	.....	.....	.....	.....	.....	412,961	.....	.....
	1881*	41,855	.....	.....	.....	60,192	.....	.....	.....	.....	.....	519,856	.....	.....
PRODUCE, (bushels.)	1851	297,157	196,007	1,384,437	37,475	1,986,789	61,438	.....	170,301	467,327	32,325	287,837	.....	.....
	1861	312,031	269,578	1,978,137	18,529	3,824,314	59,706	21,333	195,340	554,315	81,727	334,287	9,882	.....
	1871	227,497	296,050	2,190,199	23,349	5,560,975	33,987	35,203	234,157	468,137	150,830	443,732	8,121	2,830
	1881	529,251	228,748	1,873,113	13,532	7,378,387	47,567	37,220	339,718	1,006,711	326,143	597,731	8,128	1,793

	Year.	Apples.	Grapes (lbs.)	Other Fruit.	Tobacco (lbs.)	Hops (lbs.)	Flax and Hemp, dressed, (lbs.)	Cheese (lbs.)	Butter (lbs.)	Maple Sugar (lbs.)	Hives of Bees.	Dyke Marsh.	Salt Marsh.	Cultivated Intervale.	Cultivated Upland.
ACREAGE ...	1851	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35,487	20,729	77,102	894,714
	1861	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1871	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1881	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
PRODUCE (bushels.)	1851	.....	.....	.....	.....	.....	.....	652,569	3,613,890	110,441	.....	.....	.....	.....	.....
	1861	186,484	.....	4,335	.....	.....	.....	901,296	4,532,711	249,519	.....	.....	.....	.....	.....
	1871	342,513	8,167	12,736	863	12,380	111,538	884,850	7,101,867	151,190	3,038	.....	.....	.....	.....
	1881	903,519	35,015	18,485	1206	18,677	63,750	501,650	7,465,285	267,481	.....	.....	.....	.....	.....



No. 2.

umber of Horses, Horned Cattle, Sheep and Pigs, in the Province of Nova Scotia in each of the years.

	Years.	Horses.	Horned Cattle.	Sheep.	Pigs.
mber of Animals.	1851	28,709	156,257	282,180	51,533
	1861	41,927	262,297	332,653	53,217
	1871	49,579	279,967	398,377	54,162
	1881	57,167	325,603	377,801	47,256

EDUCATIONAL.

INTRODUCTORY.

The system of public education is free and non-sectarian, though the latter feature is not interpreted in such a manner as to exclude from the teaching profession members of religious orders when regularly licensed and engaged by competent authority. The following description of its general scope and character is taken from a recent English publication: *

"The system of education in Nova Scotia is progressive, from the Infant School through the various steps to the High Schools and Academies, and thence to the College and Universities. Private Schools are almost unknown, and are not required. So broad and thorough is the work of the Public Schools that the boy or girl (and a number of lady graduates of the Colleges are to be found in the Province) can pass from the Primary Schools through the different grades to the High Schools or Academies, whence matriculation into the Colleges is an easy step. The Public Schools of the Province, through the Academies, are the feeders of the Universities, and no 'coaching' or private study is required by the fairly studious Academic or High School pupil to gain admittance for taking a full Collegiate course. * * * The examination of the schools of Nova Scotia is not conducted on the absurd system of the British Isles. There is no payment by results, and the bogey of percentages is unknown. The object is to find out the quality of the work, and to see that the daily routine is carried on with regularity."

To the foregoing it may be added that in few, if any, countries are the opportunities of education more generally diffused. The circumstances are indeed exceptional in which a Nova Scotian youth does not find within his reach educational facilities that will fairly fit him for the duties of citizenship and life.

*The Schools of Greater Britain: By John Russell, F. E. I. S., F. R. Hist. S.

HISTORICAL.

The following is a brief outline of the legislative progress of Nova Scotia towards her present efficient system of free, unsectarian education. It is taken, with a few modifications, from a recent report to the Legislature by the Provincial Superintendent of Education:

The first General Assembly of the Province was convened in 1758. For more than half a century, with a single exception of a local character to be duly noted, the matter of public schools seems to have attracted no parlimentary consideration whatever. We should not too severely condemn the legislators of the infant colony for their apparent apathy in regard to education. The duty of a State to provide for the mental training of its youth, and the important bearing of such training on both industrial and moral advancement, were not then the accepted principles that they are to day. The Legislature, moreover, with but imperfect powers of providing revenue and controlling expenditure, was constantly beset with urgent problems growing out of the material necessities of thinly peopled settlements, dotting here and there the borders of a practically unbroken wilderness.

In 1780 an Act was passed providing for the establishment of a Public Grammar School in the town of Halifax. This is the exceptional instance noted above, —the only sign of legislative interest in matters of general education during the first half century of our history under a parliamentary organization. The Act remained in force until 1876, when the Grammar School which it created was merged in the Halifax High School. It provided that a sum not exceeding £100 should be annually granted for the support of a school-master; and that whenever the number of scholars should exceed forty, a further allowance of £50 per annum be added for the support of an usher or assistant. An Act was contemporaneously passed which provided for raising "the sum of £1500 *by lottery* for defraying the expense of building the school-house."

It must not be supposed that during this long period the rural portions of the province were entirely destitute of schools. Through an arrangement made with the Board of Trade and Plantations when, steps were being taken for the settlement of Halifax, the Society for the Propagation of the Gospel in Foreign Parts established and maintained schools in certain localities, grants of land being awarded the Society in consideration of its services. It was undoubtedly intended

and expected that the whole Province, as it became gradually settled should receive school-masters from this source. But immigration into the country did not come by the anticipated channels. Most of the early settlers brought with them prepossessions more or less unfavorable to the carrying out of the designs of the Society, whose schools were practically confined to the few localities where the people were of direct English origin, and were naturally under the control of the clergymen of the Church of England in whose parishes they were situated. Elsewhere, if schools existed, they were the result of private, often of individual, effort. They were seldom open more than a small fraction of the year. Few as they were, they would have been still fewer, had not such teachers as were available fortunately placed a tolerably accurate financial estimate on the value of their own services.

In the year 1811, the Legislature, which contained at that time several members of great ability and eminence, made a courageous, but unfortunately abortive, attempt to lay the foundations of a system of general Education, by passing an Act with the following suggestive preamble: "Whereas, it is highly advantageous to the youth of this Province to afford them easy means of acquiring useful knowledge in those essential parts of general Education which are necessary to persons of every rank and station in civilized society." The Act provided a grant of £25 in aid of a Common School in any settlement of not less than thirty families, and in which £50 should be raised for school purposes. The management of each school was committed to a board of three trustees, selected by the Court of Sessions from six persons nominated for the office by a meeting of "the forty shilling freeholders" of the settlement in which it was proposed to establish a school. It is noteworthy that at this early period there was a partial recognition of the principle of supporting schools by assessment. The £50 to be raised locally as the condition of a legislative grant might either be "subscribed" or "voted" at the meeting of freeholders called for the nomination of trustees. If "voted," this sum "was to be assessed and collected in like manner as poor rates," and all pupils were to be "admitted free." The provisions of the Act thus briefly outlined proved almost entirely inoperative. The reason is not far to seek. The receipt of Legislative aid was based on a condition entirely beyond the circumstances of most settlements to supply.

In 1826 a more elaborate Educational Act was passed, providing



for the establishment of Boards of Commissioners, for the division of the territory supervised by each Board into School Districts or Sections, and for the apportionment to each county of a fixed grant from the public treasury. These grants were to be distributed by the Boards of Commissioners, but amounted in the aggregate to only £2500. To the Boards was entrusted the duty of examining and licensing teachers.

In 1832, the total annual grant in support of Education was increased to £4000. The number of Commissioners in each Board was increased from three to five. In the local support of schools, the principle of assessment was recognized where "two-thirds of the freeholders and inhabitants should decide in favor of it."

In 1841 the Provincial Grant for Schools was raised to £6000, and "A Central Board of Education," was created, to establish forms of returns of schools, affidavits, certificates," &c., and generally to promote "greater uniformity in the system to be pursued by the respective Boards of Commissioners." The two-thirds vote of "Freeholders and inhabitants," previously required to authorize local assessment, was exchanged for the vote of a simple majority.

Further modifications were introduced in 1845, when the aggregate legislative grant was nearly doubled, being fixed at £11,170, at which limit it remained until the introduction of our present system in 1864. The special grants for Grammar Schools were raised to £1700. A change was made in the composition of Trustee Boards. The "householders" of each Section were empowered to elect two Trustees, to whom the Commissioners might at their own option add a third.

Of general school legislation preceding our present system there remains to be noticed only the Act of 1850. This is the Statute published in the First and Second Series of the Revised Statutes of the Province. It provided for the appointment of a Superintendent of Education, enlarged and more accurately defined the powers of Commissioners and Trustees, and somewhat improved preceding arrangements for the examination and licensing of teachers. Under the first of these provisions John W. Dawson, Esq., (now Sir William Dawson, LL. D., F. R. S., C. M. G., Principal of McGill University), was appointed Superintendent of Education. After a few years' service Mr. Dawson resigned to assume important duties elsewhere. His successor was the Rev. Alexander Forrester, D. D., who from 1855 to 1864 held the position in conjunction with the Principalship

of the Provincial Normal School, an institution founded by the Legislature in 1854. Both these gentlemen labored indefatigably in urging upon both people and Legislature the principle of Free Schools supported by universal assessment.

The Act of 1850 remained upon the statute book, without material modification, for fourteen years. During that period few, if any, school sections availed themselves of the optional principle of assessment which it embodied. Large districts of inhabited country remained without educational facilities. Often necessity forced commissioners to credential as teachers persons devoid of obvious rudimentary qualifications. The population of the Province was rapidly increasing, but the school attendance was practically stationary, while even for that limited attendance the provided accommodation was wholly inadequate.

In 1864 the times had grown ripe for some better and more efficacious system of public instruction. The Legislature rose to the measure of its opportunity. Wisely and patriotically forgetting partisan distinctions and disputes, it laid the foundations of a General Provincial System of Education. At the ensuing session, in 1865, it led the way among all the Colonies of the British Empire, in making local assessment for the support of Schools the necessary basis for their legal recognition.

EDUCATIONAL ORGANIZATIONS.

An elaborate system of school administration is detailed in the Educational Statutes of the Province. All that is attempted here is a brief reference to some of the leading provisions. The highest authority in all matters relating to schools is the Council of Public Instruction, composed of the members of the Executive Council, when acting in an educational capacity. This body possesses a general power of enacting regulations necessary to give effect to the educational law of the Province, provided they are not inconsistent with its provisions. Specifically, the Council appoints Inspectors on the recommendation of the Superintendent of Education, and with his concurrence prescribes text-books, apparatus, and courses of study for the public schools. It also establishes regulations for the examining and licensing of teachers, and for the management of the Normal School and of County Academies. The Superintendent of Education, above referred to, is an administrative officer, appointed by the Governor-in-Council, acting by statute as Secretary of the

Council of Public Instruction, and charged with the general duty of enforcing the provisions of the law and the regulations of the Council. Subject to the Council, he exercises a general supervision over the Inspectors, and over the various grades of schools. He is required to report annually to the Legislature, and to offer such suggestions on educational subjects as he may think proper.

The Boards of School Commissioners exercise severally jurisdiction over districts corresponding in most cases to the civil or political Municipalities. Each board consists of seven (or more) gentlemen appointed by the Governor-in-Council. Formerly a board, within its own district, had almost all the powers now possessed by the Council of Public Instruction as regards the Province as a whole. At present the functions of the Boards are less important than formerly, being chiefly limited to arranging the boundaries of school sections, with some appellate powers in cases of dispute between trustees and teachers.

TRUSTEES.

The Province is divided into small districts, called *sections*. These sections number about 2000, and each is under a board of local managers called Trustees. The trustees, of whom there are three in each section, are chosen at the yearly meeting of the ratepayers, by a majority of those present, decide what amount shall be raised by the section to supplement the sums provided for public schools by the Province and Municipality, and also decide whether any, and what sum, shall be raised for the purchase or building of school houses, for the purchase or improvement of school grounds, or for general school purposes. The duties and powers of trustees are carefully defined by Statute. Their corporate powers are to be used generally so as to provide school privileges free of charge for all persons resident in the section, five years of age or upward *who may wish to attend School.* The local assessment for the support of Schools is collected under their supervision and all Municipal appropriations for Education are received and expended by them. Subject to certain limitations, they have the right of determining the sites of school houses, and of suspending and dismissing teachers; trustees who neglect their duty are liable to prosecution and fine.

By special provision the city of Halifax and other incorporated towns are not included in the general provision for trustees. In Halifax school affairs are administered by a Board of School Commissioners comprising twelve members, six selected by the City Council,



six appointed by the Provincial Government. In the other towns the management of the schools is vested by law in smaller boards under the same system of dual appointment.

Special provision exists whereby trustees, in case ratepayers fail to rate adequate sums for the support of schools, can, through the intervention of a board of commissioners, obtain legal authority for assessing the necessary amount on the section.

TEACHERS.

No person can enter into a legal engagement with trustees to act as a teacher in the public schools unless he holds a valid license from the Council of Public Instruction. All contracts and agreements between trustees and teachers must be in writing. The rate of pay to be received by the teacher from the trustees must be a fixed and definite sum or stipend, and must be distinctly named in the agreement. The grant payable to the teacher from the Provincial Treasury is independent of, and in addition to, the sum or rate specified in the agreement with the trustees.

Teachers are arranged in four classes—Academic, first, second, and third. There is an annual examination of persons wishing to become teachers, held about the 20th of July. There is, of course, a separate syllabus of subjects for each class. In order to obtain the license applied for a candidate must make a general average of 50 or upwards (out of a possible 100) in all the subjects, with no mark in any specific subject further below 25 than the general average is above 50. In the Academic class 37.5 is substituted for 25 as respects the English subjects, while in Latin the required average must be fifty or upwards, and in Greek 37.5, without any special provision regarding minimum marks.

The Act relating to Public Instruction specifies the duties and obligations of teachers with great minuteness. Any teacher convicted of making a false or fraudulent return of school attendance is liable to have his license cancelled.

THE NORMAL SCHOOL.

Adequate provision is made for the training of teachers in the Provincial Normal School. This institution is situated in the beautiful town of Truro, sixty miles from Halifax. The building is spacious and elegant, comprising, in addition to lecture rooms, library, labora-

tory, &c., and the accommodation for the connected Model School Departments. The faculty (exclusive of Model School Teachers) consists of a Principal, who is the chief lecturer on educational methods, and four assistants. Connected with the Normal School is an institution for giving special instruction to teachers in the science and art of agriculture, with the aim of imparting qualifications which will enable them to take charge of a limited number of Agricultural Schools throughout the Province, somewhat on the plan recommended for Ireland by Professor Sullivan.

The object of the Provincial Normal School is to train teachers for the public schools of Nova Scotia. The carrying out of this object embraces the advancement of students in general scholarship and the development of teaching power. The means employed for securing the professional aim of the institution embrace review of elementary studies of the common school with direct reference to method, instruction in the principles of education, and training in the art of teaching by actual practice.

The Annual Session commences on the first Wednesday of November, and closes on the first Tuesday after the 8th of July.

Except in the case of students of a previous session, who may be admitted at any time, at the discretion of the Faculty, applicants are admitted to the Institution only at the beginning of the session.

The Course of Study common to all the classes includes Method and School Management, the Elements of Psychology, Industrial Drawing, Vocal Music, and Observation, Criticism, and Practice in Teaching.

Such instruction will also be given in common minerals, plants, and animals as will give the qualifications needed in carrying out the requirements of the Course of Study for the Public Schools of Nova Scotia.

The Normal School Diploma, issued by the Council of Public Instruction, will be awarded to students of the different classes on fulfilment of the conditions specified in the regulations and by-Laws of the institution. This diploma shall be of two different grades; the first Grade to be granted to students who have completed the course provided for the first class, and the second grade to students who have completed the course for either the second or third class.

Students of the first class who fail to fulfil all the conditions for first grade diplomas, may, if they reach the required standard in

scholarship and professional qualifications, receive a diploma of the second grade.

Honorary distinction will be awarded to students of exceptional scholarship, or teaching ability.

Students who do not fulfil the conditions required for a diploma may receive a certificate of attendance.

The Normal School Diploma shall be a valid license of its class (first or second) from the date of its issue until the end of October next ensuing, so that persons holding it can at once enter upon engagements to teach, and enjoy for the time specified, irrespective of the result of the examination for license, all the privileges accorded to teachers of the corresponding class.

INSPECTION.

The public schools are inspected semi-annually. For the purposes of inspection, the Province is divided into ten districts. No school grants are payable without a certificate from the Inspector that the law and its accompanying regulations have been complied with in the management of the school. The law imposes on the Inspectors various specific duties in the administration of educational affairs, and in general they are charged to co-operate with trustees and teachers in all possible ways for the promotion of education. As previously stated, Inspectors are appointed by the Council of Public Instruction, on the recommendation of the Superintendent. Without any statutory direction or limitation, they have been in recent years uniformly chosen from the ranks of the most experienced teachers.

FINANCIAL.

Generally, the public schools of Nova Scotia may be said to be maintained from three sources, viz: The Provincial Treasury, the Municipal or County School Fund, and Sectional Assessment. As already intimated, whatever the two former may fail to supply must be raised by the last named means. With the exception of the County Academy grants (hereafter referred to) all grants from the Provincial Treasury are paid direct to the teachers, according to class of license held. Teachers of the first class receive—all required conditions being fulfilled—at the rate of $120 for the school year; those of the second class at the rate of $90: those of the third at the rate of $60. Teachers holding Academic licenses, as a rule, receive the same grants

as first class teachers, but in certain specific cases, when in charge of large grade schools, they receive $100 extra.

The *County School Fund* is a sum equal to 30 cents for every inhabitant of the county (or municipality) levied on the property by the county, and distributed among the schools, semi-annually by the Superintendent of Education, through orders given to the trustees or the Treasurer of the county or municipality. Each Board of trustees receives $12.50 per term for each teacher in its employ. The remainder of the fund is apportioned among the schools on the basis of attendance. The design of the county school fund is a most equitable and commendable one, viz: to secure help from the wealthier portions of a county towards maintaining schools in the poorer. The following is a statement of the total Provincial expenditure for the support of public schools during the year 1886-7.

Gov't. Expenditure for public schools....		$ 203,564 19	
" "	Ins. for Deaf and Dumb and Halifax School for the Blind.....	3,922 50	
" "	Normal & Model Schls.	6,844 08	
" "	School of Agriculture..	1,754 51	
			$ 216,085 28
Local Expenditure, County Fund.....		119,047 38	
Assmt. on Sections for support of Schools.		290,554 05	
" "	buildings and repairs.	46,671 50	
			356,262 93
Total Expenditure for Public Schools.....			$ 672,348 21

COURSES OF STUDY.

Carefully prepared programmes of study are provided for all the Public Schools. That for Common Schools embraces primary and intermediate subjects, and is divided into eight grades or classes. This course, as defined by the authorities, is intended: 1. To discourage and prevent over-pressure, especially as regards the premature and injudicious use of text-books in elementary classes, and the assignment of difficult home lessons to the pupils of such classes; minor changes recently introduced are designed to aid in more fully accomplishing this desirable object. 2. To foster educative modes of instruction. The teacher has a recognized position accorded him,

apart from and above that of a mere "hearer of lessons" learned and recited on the principle of a vicious and irrational verbalism. 3. To provide, in addition to a thorough instruction in the fundamental or instrumentary branches, a reasonable opportunity for becoming familiar with the literary, industrial and scientific elements of education.

The programme for High Schools outlines a course of Academic instruction for three years, with optional provision for a fourth year's study. The term "High School" is not a matter of legal definition. As used, it means simply any school in which instruction is systematically imparted under the provisions of the advanced Course of Study.

COUNTY ACADEMIES.

The Trustees of Schools in the shire or county town of each county in the Province have authority to establish or maintain an Academy, which shall be open free of charge to qualified pupils from all parts of the County in which it is situated. The trustees of a County Academy, conducted in accordance with law and regulations, are entitled to receive special grants from the public treasury according to the following scale:

(*a.*) When *one* duly qualified teacher is employed, with a properly certified yearly average of at least fifteen High School pupils, a grant equal to two-thirds of the salary paid such teacher, provided that the grant so paid shall not exceed five hundred dollars.

(*b.*) When *two* duly qualified teachers are employed, with a properly certified yearly average of at least forty High School pupils, a grant equal to two-thirds of the amount of salaries paid such teachers, provided that the grant so paid shall not exceed one thousand dollars.

(*c.*) When *three* duly qualified teachers are employed, with a properly certified yearly average of at least eighty High School pupils, a grant equal to two-thirds of the amount of salaries paid such teachers, provided that the grant so paid shall not exceed fifteen hundred dollars.

(*d.*) When *four* duly qualified teachers are employed, with a properly certified yearly average of at least one hundred and twenty High School pupils, a grant equal to two-thirds of the amount of salaries paid such teachers, provided that the grant so paid shall in no case exceed seventeen hundred and twenty dollars.

SCHOOL STATISTICS.

The population of Nova Scotia (according to the census of 1881) is 440,572. The number of enrolled pupils in attendance at the Public Schools during the year 1886 was 105,410. The number of teachers employed during the summer term of that year was 2,171, and during the winter term, 2,052.

EDUCATION OF THE DEAF AND DUMB AND OF THE BLIND.

Vigorously conducted institutions for the special benefit of the above-named classes attest the widespread interest taken in education by the people of Nova Scotia. The Province enjoys the honorable distinction of being the first among the Colonies of the Empire to recognize the claims of the deaf and dumb, having in 1857 voted an appropriation of $1,000 from the Public Treasury in support of an institution founded in Halifax by private philanthropy. This appropriation was regularly continued by the Legislature as an annual grant until in 1884 the Institution for the Deaf and Dumb was virtually made a part of the school system of the Province by an Act providing that any deaf or dumb mute child of sound mind, between the ages of eight and eighteen, is entitled to admission on the order of the Warden of the Municipality to which the child's parents belong, and the sum of $120 per annum is appropriated for its support, half from the Provincial Treasury, half from the Municipal School Fund. The Halifax School for the Blind is similarly incorporated with the educational system of the Province, but in view of special expenses connected with the education of the blind each pupil draws an annual grant of $150.

UNIVERSITIES AND COLLEGES.

Properly speaking, Nova Scotia cannot be said to have a Provincial system of University education. Particulars are subjoined regarding the organization and equipment of the four degree-conferring Institutions of the Province. It will be seen that, with the exception of Dalhousie, they are under strictly denominational auspices. In 1876 an attempt was made to secure the harmonious co-operation of these institutions and, if possible, elevate the standard of collegiate education by founding a provincial corporation called "the University of Halifax," an examining and degree-conferring institution framed after the model of the University of London, but it has not exercised

its powers since 1881 in consequence of the withdrawal at that date of the legislative grant originally provided for its support. The following institutions were by law affiliated with the University, enjoying by virtue of such affiliation certain duly specified rights and privileges: King's College, Windsor; Dalhousie College, Halifax; St. Mary's College, Halifax; Acadia College, Wolfville; St. Francis Xavier's College, Antigonish; and Mount Allison Wesleyan College, Sackville, New Brunswick. The latter is a flourishing institution extensively patronized by the Methodist denomination of Nova Scotia as well as of the other Maritime Provinces. St. Mary's College, (Roman Catholic) Halifax, is not now in operation.

THE UNIVERSITY OF KING'S COLLEGE, WINDSOR.—This institution was founded in 1788 by Act of Parliament, as "King's College of Nova Scotia," in accordance with the recommendations of a committee of the House of Assembly, November, 1787. It was incorporated in 1802 by royal charter granted by His Majesty King George III. Patron, His Grace the Archbishop of Canterbury, Visitor, the Lord Bishop of the Diocese. Instruction is imparted by a Faculty of five members, the President being Professor of Divinity. Here are also extra-mural lecturers in Divinity, and a Board of Examiners for Degrees in Civil Law.

The patron of the University is the Archbishop of Canterbury, to whose approval "all Statutes, Rules and Ordinances" of the Board of Governors are subject, but King's College is open to students of all denominations, and imposes no religious test either on entrance or on graduation in any Faculty, with the exception of Divinity.

In 1871 a Curriculum was issued for a course of Civil Engineering and the University has subsequently granted degrees and diplomas in that science, as well as in Arts, Law and Divinity.

The object aimed at in the course of study is to secure a good general education for all matriculated students, while every facility is afforded for the prosecution of special studies. Accordingly every matriculated student, except under peculiar circumstances to be approved of by the College Board, is required to attend the lectures of all the professors until he has passed his responsions, which is generally done in the sixth term of residence. After this he is at liberty to select three or more of the subjects lectured on to form the subjects of his B. A. examination. If the student be desirous of taking honours at his B. A. examination he can do so in any one of the subjects lectured on after passing the ordinary examination.

Students who do not intend to take the degree of B. A. are permitted to attend the lectures of any of the Professors, subject to all the usual regulations, and can, moreover, under certain conditions, proceed to degrees in science and engineering.

Numerous scholarships, prizes and honorary distinctions, are open to be competed for by students in the several faculties, the principal of these being the following :—

Scholarship or Prize.	*Annual Value.*
One Cogswell Scholarship.....	£24 sterling.
Eight Divinity Scholarships.....	£30 sterling each.
One Binney Exhibition.....	$50.
One McCawley Hebrew Prize....	£9 sterling.
One Bishop's Prize.....	$20 in books.
One Almon-Welsford Prize	Interest of Fund £100 Old Currency.
One Aikins Historical Prize.....	$30.
Three Stevenson Scholarships....	$69 each.
One McCawley Scholarship.....	Interest of Fund.

The University possesses a library which is one of the largest in the Province, and contains all the elements requiste for making it a thoroughly well appointed and efficient reference library. Its foundation is due to the efforts of the first Bishop of Nova Scotia, and may be placed in the year 1780. Until the year 1870, the library was contained in a single room in the college building. At that date it was removed to the new hall specially built for the purpose, and presented to the University by the incorporated alumni. It numbers now about 8000, including many standard works in theology, and a fair selection of the great Greek and Latin classics.

Dalhousie College and University.—This institution embraces Faculties in Arts, Law, and Medicine.

Dalhousie College was founded by the Earl of Dalhousie in 1821, "for the education of youth in the higher branches of science and literature."

The original endowment was derived from funds collected at the port of Castine in Maine, during its occupation in 1814 by Sir John C. Sherbrooke, then Lieutenant-Governor of Nova Scotia. These funds the British Government authorised the Earl of Dalhousie, Sir John's successor, to expend in "defraying the expenses of any improvement which it might seem expedient to undertake in the

Province;" and the Earl, believing that "a Seminary for the higher branches of education is much needed in Halifax—the seat of the Legislature—of the courts of justice—of the military and mercantile society," decided upon "founding a College or Academy on the same plan and principle of that at Edinburgh," "open to all occupations and sects of religion, restricted to such branches only as are applicable to our present state, and having the power to expand with the growth and improvement of our society."

The original Board of Governors consisted of the Governor-General of British North America, the Lieutenant-Governor of Nova Scotia, the Bishop, the Chief Justice and President of Council, the Provincial Treasurer, and the Speaker of the House of Assembly.

After unsuccessful efforts on the part of both the British Government and the Governors of the College to effect a union with the only other College then existing in the Province, an institution modelled after the University of Oxford, this College went into operation in 1838, under the Presidency of the Rev. Thomas McCulloch, D. D., and with a staff of three professors.

By an Act passed in 1841, University powers were conferred on the College, and the appointment of the Governors was vested in the Lieutenant-Governor and Council.

In 1843 President McCulloch died, and in 1845 the College was closed, the Governors considering it "advisable to allow the funds of the institution to accumulate."

In 1848 an Act was passed, authorising the Lieutenant-Governor and Council to appoint a new Board of Governors "to take such steps for rendering the institution useful and efficient as to His Excellency may seem fit." This Board, from 1849 to 1859, employed the funds of the University to support a High School.

In 1863 the College was re-organized under an Act of the Legislature, extending its basis and making important alterations in its constitution. After providing for the appointment of a Board of Governors, with duly defined powers, to control the property and funds of the institution and generally to manage its affairs, the statute enacts that "whenever any body of Christians, of any religious persuasion whatsoever, shall satisfy the Board that they are in a position to endow and support one or more chairs or professorships in the said college, for any branch of literature or science, approved of by the Board, such body in making such endowment, to the extent of twelve hundred dollars a year, shall have a right,

om time to time, for every chair endowed, to nominate a Governor
) take his seat at the Board, with the approval of the Board of
overnors and of the Governor-in-Council, and shall also have a
ght, from time to time, to nominate a Professor for such chair, sub-
ct to the approval of the Board of Governors; and in the event
f the death, removal, or resignation of any person nominated under
is section, the body nominating shall have power to supply the
acancy thus created."

In pursuance of the Act of 1863, the Presbyterian Church of the
ower Provinces closed their College, and agreed to support two
hairs in this University; the Synod of the Maritime Provinces in
onnection with the Church of Scotland founded one chair; and the
College opened in 1864, under the Principalship of Rev. James Ross,
D.D., and with an Arts Faculty of six Professors.

In 1868 a Faculty of Medicine was organized, which in 1875
developed into the Halifax Medical College. In 1885 the Faculty
was re-organized, and the Halifax Medical College affiliated.

In 1883 a Faculty of Law was added.

In 1879 GEO. MUNRO, Esq., of New York, a native of Nova Scotia, placed in the hands of the Governors the funds necessary for the endowment of a Professorship of Physics. In 1881 he established a Professorship of History and Political Economy. In 1882 he founded a chair of English Language and Literature. In 1883 he added to the staff of the College a Professor of Constitutional and International Law and Tutors in Classics and in Mathematics. In 1884 he founded a Professorship of Metaphysics. Since 1880 he has provided the University with Exhibitions and Bursaries to the amount of $15,700, which, according to his own desire, have been so offered for competition as to stimulate to greater activity and efficiency the High Schools and Academies of Nova Scotia and the neighboring Provinces.

To connect the donor's name for all time with the benefits thus conferred both on the University and his native country, the chairs which he has founded shall be called the GEORGE MUNRO CHAIRS of PHYSICS, of HISTORY AND POLITICAL ECONOMY, of ENGLISH LANGUAGE AND LITERATURE, of CONSTITUTIONAL AND INTERNATIONAL LAW, and of METAPHYSICS respectively.

In 1883 Alexander McLeod, Esq., of Halifax, bequeath University the residue of his estate. The following is a from his will:

"All the residue of my estate I give and bequeath to ernors of Dalhousie College or University in the city of H trust, that the same shall be invested and form a fund to the McLeod University Fund, and the interest and income shall be applied to the endowment of three or more pro chairs in said College as they may deem proper; but this b made upon these conditions, namely, that if at any time College or University should cease to exist, or be closed years, or be made a sectarian College, then and in any such said fund and all accumulations thereof shall go to the sai of the Maritime Provinces of the Presbyterian Church in to be used for the purpose of higher education in connecti said Synod, and it is further stipulated that no part of th shall ever be used, either by said Governors of Dalhousie C by the said Synod, as a collateral security under any circu whatever."

According to the provisions of the will the McLeod C Classics, Chemistry, and Modern Languages were founde

Connected with the University is a flourishing Alumni Ass having objects in common with similar institutions in other The following is a summary of the students in attendance the last Collegiate session:

FACULTY OF ARTS.

Undergraduates in Arts	71
Undergraduates in Science	1
General Students	55
Students, Arts Faculty	12

FACULTY OF LAW.

Undergraduates	36
General Students	10
Students, Law Faculty	4
Students, Arts and Law Faculties	17
Deducting in both Faculties	
Total	16

THE UNIVERSITY OF ACADIA COLLEGE, WOLFVILLE.—This Institution, founded in 1838, is under the control of the Baptist Convention of the Maritime Provinces. At present its operations seem limited to the department of Arts.

Acadia College was founded in 1838. Its location at Wolfville, Nova Scotia, is very central to the populations of the Maritime Provinces, being as readily reached from New Brunswick and Prince Edward Island as from the principal parts of Nova Scotia.

The charter of the College provides that the Trustees and Governors, together with the Fellows, shall be a body politic and corporate, in deed and in name, and have successors forever as "The Trustees, Governors and Fellows of Acadia College." It confers on the corporation power to have and use a common seal, to appoint and remove professors, to make by-laws and ordinances for the regulation and general management of the College, and to acquire, hold, and apply all forms of property for the use and benefit of the same.

The "Body of the College" provided by the charter, is composed of the Faculty, six Fellows, and twelve Scholars, upon whom are conferred the powers of a University, and who are designated "The Senate of the University of Acadia." The chief functions of the Senate are those of discipline, the prescribing of courses of study and text-books, the care of the library and museum, and the conferring of the learned degrees, or any such other degrees of literary, scientific or technical honors as they may desire, and certificates of merit. At the instance of the corporation, or otherwise, the Senate may recommend professors to fill any chairs becoming vacant, and professors to fill new chairs, and to present to the corporation any member of the Faculty guilty of misbehaviour or neglect of duty. The Senate is given power also to do, perform and establish every other thing and matter of a literary and scholastic character pertaining to the University.

The Governors are appointed by the Baptist Convention of the Maritime Provinces, one third of them being nominated by the corporation of the Associated Alumni.

While no religious tests or subscriptions are required, Acadia is designed to be a positively Christian College, not only in respect of the character of its professors, and in the philosophy taught in its lecture rooms, but especially in the influences which pervade the daily life of the institution. Many now occupying important positions in society have freely acknowledged that earnest christian views were

developed or deepened in them while pursuing their studies here. In view of the fact that forms of philosophy alien to the Christian faith are finding their platform in many educational institutions, it is of increased importance that the higher education should be available under positively Christian influences.

The studies of the Arts course are comprehensive and thorough; and it is the purpose of the corporation and the Senate to maintain the College in such a state of efficiency that it shall be able to meet the wants of all young men who desire to obtain a liberal education.

In connection with the College buildings there are forty acres of land most favourably situated for the various purposes that will be developed in the growth of the institution. The new College, erected since the fire of 1877, affords excellent facilities for the purposes of instruction. Its lecture rooms are commodious, well lighted, and easily ventilated, and its Assembly Hall supplies spacious accommodation for all public Academic exercises.

Acadia graduated its first class in 1843. A four years' course has always been required for the degree of B. A. Besides the large number who have been admitted as general students, over five hundred, including the present enrolment, have entered upon the full undergraduate course, of whom 227 have received the degree of Bachelor of Arts.

"The Associated Alumni of Acadia College" is an association designed to be an auxiliary to the College. Composed chiefly of graduates, it aims to bind them together in friendship, to renew and render permanent their old attachment to the College, to ensure the life-long devotion of its members to the interests of the College, and through her to the cause of Education, more especially throughout the Maritime Provinces. The Association meets annually in June at Wolfville, when the annual oration is delivered, and the members dine together. The funds accruing from a membership fee of two dollars per annum are expended in the bestowment of prizes to students, and in such other useful ways as the annual meeting determines.

The Horton Collegiate Academy and the Acadia Seminary are Academic Institutions situated at Wolfville and under the control of the Board of Governors of Acadia College. The former aims to fit pupils to enter college, and to furnish good opportunities for boys and young men to prepare for usefulness and efficiency in the different occupations of life. In the latter, under three courses of study,

a Classical, a Literary, and a Musical, excellent provision is made for the education of young ladies in the solid, as well as the ornamental branches. The Collegiate Academy was established in 1828, and is now under the Principalship of J. F. Tufts, Esq., M. A.

The following is a summary of the students in attendance at Acadia College during the collegiate years 1885-6 :

Seniors	8
Juniors	15
Sophomores	18
Freshmen	21
General Students	10
Total	72

St. Francis Xavier's College, Antigonish.—This Institution is under the management of a Board of Governors, of which His Lordship the Bishop of Antigonish (Roman Catholic) is *ex officio* chairman. It has a well organized Arts Faculty.

St. Francis Xavier's College was founded in 1854 by the Right Rev. Dr. MacKinnon, Bishop of the Diocese of Arichat, and immediately thereafter handsomely endowed by the Provincial Legislature It was opened at Arichat in the fall of that year, and two years later transferred to Antigonish, where spacious buildings well adapted to the purpose had been prepared. The Provincial Legislature, previously to the transfer, had conferred on the Institution a charter which invested it with the power of conferring degrees. In 1875 it was affiliated to the Halifax University.

Antigonish is the thriving shire town, very finely situated in the centre of the County of that name. The surrounding country is one of the best agricultural districts in the Province, healthy, fertile, prosperous, characteristics which are fully reflected in the town. Board and lodgings are cheap, and the locality is within easy access of Halifax and Pictou on the one side, and of the Strait of Canso and the Island of Cape Breton on the other, the Eastern Extension Railway having a principal station in the suburbs. Communication by sea also is open all the summer months.

The College has been in every sense a successful institution, having

had as pupils within its walls during the last thirty-two years a large proportion of the persons who during that period have attained distinction in the various learned professions in Eastern Nova Scotia. Law, medicine and the sacred ministry have drawn their recruits very largely from among its graduates. The influence it has exerted for good cannot be easily over-estimated..

St. Francis Xavier's College has in close connection with its higher classes first-class English Common Schools, in which the ordinary branches prescribed by the Provincial authorities are efficiently taught. The Academic Department is organized and operated under the law relating to Secondary Education as the County Academy for the County of Antigonish.

MINERAL RESOURCES OF NOVA SCOTIA.

Among the most accessible sources of information about Nova Scotia minerals may be mentioned the writings of Sir William Dawson, the reports of the Geological Survey of Canada, the reports of the Department of Mines, the "Mines and Mineral Lands of Nova Scotia," by E. Gilpin, Jr., and papers by various writers in Canadian, English and American scientific transactions.

The following remarks may serve to convey in a brief outline the most salient points of interest in this connection:

It will be observed that we have in our Province, coal, iron and gold, and the development of the two last-named minerals will form an important page in our future history. Copper, manganese, antimony, barytes, gypsum, marble, etc., also occur in abundance, and have been worked to some extent.

Future researches will probably disclose other valuable minerals. Thus the Precambrian rocks of Cape Breton, like their counter parts in Quebec and Ontario, may yield phosphates, plumbago, asbestos, etc., in addition to the iron and copper ores already known to exist in them.

These resources are being gradually developed, and few of the English colonies offer a more promising field to the miner and capitalist. The natural position of Nova Scotia, projecting into the North Atlantic, with fine harbors, cheap fuel, numerous minerals, its healthy climate and orderly population, and its nearness to England, all combine to forecast an important and prosperous future for it.

COAL.

THE COAL FIELDS OF NOVA SCOTIA.

Nova Scotia coals belong entirely to the bituminous system of Dana, and may be subdivided into coking, free burning, and cannel coal. It may be remarked that the coals of this country belong to the same geological horizon of the carboniferous system as those of England and the Eastern United States, and present many points of intimate connection in fossil remains and in the associated strata.

SYDNEY COAL FIELD.

This district occupies the eastern shore of Cape Breton County. Its land area is estimated at 200 square miles, and it now forms the rim of an extensive coal field extending under the Atlantic. Fortunately experience has proved that nearly all the seams can be followed in their subaqueous extension. Estimates based on the system of enquiry adopted by the Royal Commission on the duration of the coal supply of Great Britain, put the amount of available coal in these submarine areas, after making proper deductions for waste, etc., at not less than 2,000,000,000 tons.

The following section, taken in the Lingan district, will serve to show the thickness and relative positions of the best known seams :—

Seam.	Strata and Coal. ft.	in.
Seam A	3	..
"	306	..
Carr	6	5
"	190	..
Barrasois, or Hub	12	1
"	379	3
Harbor, Victoria or Sydney	8	..
" "	235	..
Seam D	3	..
"	78	..
North Head	4	..
"	75	..
McAuley, Phelan, or Lingan	8	..
" "	95	..
Ross, or Emery	4	6
"	340	..
Gardener	4	9

The coal field is remarkably free from disturbances, etc., and Professor Lesley, in a report, dwells strongly on this point.

Nearly all the seams lie at easy angles, yield little water, and owing to the generally firm character of the roof, they can be mined with unusual cheapness and safety. So strongly marked is the impermeable nature of the strata, that at a moderate depth the submarine workings are perfectly dry.

There are seams found underlying those given in the above section,

and varying in thickness from two to eight feet, but in the presence of the seams cropping on the shore they have not hitherto attracted much attention.

The coals of this district are bituminous, and specially adapted for gas and coke making, and for steam purposes. The Sydney Mines coal is largely used in the Lower Provinces for domestic purposes. The gas values may be understood from the following test made of the Harbor seam coal: —

Gas, cubic feet per ton	10,000
Candle power	16
Coke, good, lbs	1,470

Official reports on this seam made to the Admiralty show that it contains 83.5 per centum of carbon, and that it is practically equal to Welsh steam coal. Trials made on H. M. S. *Gannet* show that when mixed with twice its weight of the best Welsh coal a saving of 12 per cent. over the Welsh coal alone was obtained. Practical tests made some years ago for the United States Naval Department showed a practical evaporative power of 7.9 lbs. for the Sydney seam. Similar tests and trials of the other seams show equally good results, and Sydney harbor has become a well-known port of call for steamers requiring bunker coal. Newfoundland sealing steamers prefer Cape Breton coal to all other, owing to the rapidity with which it raises steam.

These coals have been largely used on Canadian railways, and are found to compare most favorably with the best imported coals, and in many cases are given the preference. As yet the slack coal has not been burned into coke, except in small amounts for the local foundries; but considerable quantities are shipped to the United States, where an economical fuel is made by mixing it with the dust of anthracite coal, for use under ordinary steam boilers. The contemplated establishment of large iron and copper works on Sydney harbor will afford a near market for both slack and coke.

The following analyses will serve to show the general character of the seams of the district. The analyses are by E. Gilpin, Jr., and for fuller information on the compositions and values of Nova Scotian coals the reader may refer to Mr. Gilpin's paper on Canadian coals in the Transactions of the North of England Institute of Mining Engineers, 1873.

Composition.	Name of Seam.		
	Sydney.	Phelan.	Harbor.
Moisture	1·260	·921	·80
Vol: Comb: Matt: Fast Coking...	35·514	30·312	29·40
Fixed Carbon " ...	59·111	62.334	65·50
Vol: Comb: Matt: Slow Coking...	33·840	28·625	27·85
Fixed Carbon " ...	60·785	64·021	67·05
Ash	4·115	6·433	4·30
Sulphur	1·705	1·105	1·29
Theo: Evaporative power	8·33	8·78	9·19

It may be remarked that the collieries are well equipped, and worked in a systematic manner; and that, standing between the English and American coal fields, the operators have adopted from both the appliances and methods a varied experience has shown to be best adapted to the needs of Nova Scotian coal mining.

The enormous amount of available coal contained in this district may be estimated from the Geological Survey Report, which states that the seams now opened contain, in the areas leased for the purpose of working them, over 212,000,000 tons. This estimate does not include the coal in the seams which are unopened in the land areas in operation, nor the values of the seams in the leases which are at present awaiting a favorable opportunity for development which items would swell the coal supply of this district to figures representing many years' output greatly exceeding any yet obtained.

In addition to the seams already recognized in the Sydney coal field as at present worked, there are, in the vicinity of Sydney, and in the Mira and Salmon River districts, extensive tracts of the lower part of the millstone grit in which are met coal seams, some of superior quality, which although too small to be worked now in the presence of the large beds, must yield in the future an important supply of fuel.

OTHER CAPE BRETON COAL FIELDS.

On the River Inhabitants, and at Port Hood, Chimney Corner and Broad Cove, on the western shore of the Island, are small coal districts containing in all about 125 square miles, exclusive of the submarine extension of the seams found in them. At several points in these districts beds of coal of large size and excellent quality have been opened, but as yet systematic coal mining operations in Cape Breton

Island have been confined to the Sydney district. It is claimed that many of these seams of coal are of very superior steam raising qualities, and it is anticipated that as the coal trade extends, the St. Lawrence markets will be largely supplied from this source.

Passing to Nova Scotia proper, coal seams are found at Pomquet and Antigonish, but the extent of productive ground is inconsiderable. Near New Glasgow, in Pictou County, there is a coal district, not of large extent, but noted for the great size of its coal beds, and for their excellent quality.

In 5,567 feet of strata, according to the surveys of the late Sir William Logan, there are 141 feet of coal contained in 16 beds, varying in thickness from 3 to 34 feet.

The coal is slightly less bituminous than that found in the Sydney district, and is especially adapted for steam raising. Several of the coals make an excellent coke which has been successfully used with raw coal in the blast furnaces of Londonderry in Colchester County. The coal of the Acadia seam is also in demand for domestic purposes.

The following analyses of the Albion main seam, thirty-four feet thick, and of other seams now worked, will show the quality of the coals:—

Composition.	Albion Main Seam.	Acadia Colliery.	Six Feet Vale Colliery.	Intercolonial Colliery.
Moisture	1·05	2.10	1.22	1.52
Vol: Comb: Matt: Fast Coking	27·42	32.78	25.87	31.87
Fixed Carbon "	62·18	57.57	62.70	57.78
Vol: Comb: Matt: Slow Coking	26·19	29·20	22.96	29.46
Fixed Carbon "	63·41	61.15	65.61	60.19
Ash	9.35	7.55	10.21	9.10
Sulphur	1·48	.50	trace.	1.62
Theo: Evaporative power	8·68	....	8.99	8.24

There are at several points in this district beds of oil shale, which may before long be found worth utilizing. Several beds of cannel coal have been found, one of which was for some time worked on the property of the Acadia Coal Company, and yielded 126 gallons of crude oil to the ton.

There are four large and well-equipped collieries in this district. Their output is taken by the Londonderry Iron Works, local

factories and railways, and considerable shipments are made by rail and from Pictou harbor to Quebec and Montreal.

The coal measures are interrupted at New Glasgow by lower strata, but in the opinion of Sir William Dawson, and other geologists, the coal measures extend many miles to the north and north-west under the covering of the upper division of the carboniferous system. Possibly at some points this covering may be thin enough to permit of the coal being reached.

Small seams of coal are known all along the shores of the Bay of Fundy, but have not yet been worked.

The Springhill coal field lies north of the Cobequid Mountains, in Cumberland County, at the western extremity of the problematical coal field referred to in connection with the Pictou district. The northern edge of this coal field has been traced from the Joggins shore of Cumberland Basin, about 18 miles, to the Styles mine, but its deflexion to the south to join the Springhill coal mines district has not been followed. On the southern or Springhill side of the basin there is a large and important development of coal seams. The productive measures stretch for many miles in a westerly direction to the Cumberland Basin at Apple River, but have not yet been prospected. Several mines have been worked on the northern out-crop at the Joggins, Maccan, &c., but the chief development has been at Springhill by the Cumberland Railway and Coal Company, who have proved and extensively worked the following set of beds :

		Ft.	In.	Ft.	In.
North Seam—	Coal	13	..	..	..
	Strata	..	..	105	..
	Coal	5	..	..	..
	Strata	..	..	130	..
	Coal	2	4	..	..
	Strata	..	..	185	..
Main Seam		11	..	.	..
	Strata	..	..	80	..
South Seam		11	:	..	..
	Strata	..	..	100	..
	Seam	8	6	..	..
	Strata	..	..	190	..
	Seam	4	..	..	..
	Strata	..	..	176	..
	Seam	2	9	..	..
		57	7		



Their output is now at the rate of 400,000 tons per annum, and is largely used for steam purposes on Canadian railways, steamboats, etc. The coal is also adapted for domestic purposes, and its coke is extensively used at the Londonderry iron works.

The following analyses, made by Mr. Gilpin some time ago, will show the quality of the coal of this district:

Contents.	North Seam.	Main Seam.	South Seam.
Moisture	1·625	·78	1·39
Vol. Combustible matter	28·672	31·32	31·22
Fixed Carbon	65·431	62·54	61·58
Ash	4·272	5·34	5·79
Sulphur	·783	1·38	·80
Evaporative power	8·99	....	8·46

The extent of country underlaid by the productive measures is not yet clearly known, but has been estimated at 300 square miles. The district is intersected by the Intercolonial Railway, and a branch railway runs from the Springhill collieries to Parrsboro, on the Bay of Fundy, where extensive shipping docks are being constructed.

The history of Nova Scotia coal mining is a short one. Early writers of colonial history refer frequently to the Cape Breton coals, which, outcropping on the beaches and in the sea cliffs, formed a prominent feature in the landscape, and were mined by the French and English garrisons of Acadia, and by a few American smugglers. This state of affairs continued until the early part of the present century, when, after a few attempts at systematic mining, all the minerals of the Province were granted to the Duke of York, who transferred them to the London jewellers, Messrs. Rundle & Bridge, who sold them to the General Mining Association of London in 1827. This company commenced extensive operations at Sydney, Pictou, and the Joggins, in Cumberland Co., and continued them until 1857. At that time arrangements were made with the Government whereby the General Mining Association surrendered their claims, except to certain large tracts in the various coal districts, and the public were allowed to open mines under leases from the Government. This arrangement led to the opening out of quite a number of collieries, and the sales increased from 226,725 tons in 1858 to 395,637 tons in

1862. Nova Scotia coal was at this time admitted into the Unit States free of duty, and the sales to this quarter were about 450,0 tons in 1865 and 1866, out of a total of about 595,000 tons sold. 1867 the United States imposed a duty of $1.25 a ton, which in 18 was lowered to 75 cents a ton. But the sales to the United Stat continued to diminish, until in 1885 they were only 34,483 tons. I the meantime the consumption in Nova Scotia and the adjoinin Provinces had been steadily increasing, until in 1886 the sales Nova Scotia coal were as follows :

Provinces of Nova Scotia	460,237
New Brunswick	175,918
Newfoundland	71,476
Prince Edward Island	49,168
Quebec	538,762
West Indies	11,364
United States	66,003
Other countries	738
Total (long tons)	1,373,666

PETROLEUM.

Indications of this valuable mineral have been observed at Cheveri Hants Co., in Pictou County, and at Lake Ainslie, in Cape Breto but the result of explorations made in the latter locality have n proved satisfactory.

THE GOLD FIELDS OF NOVA SCOTIA.

The auriferous district of Nova Scotia stretches in an irregul band along its southern shore. Its area is estimated at about 3,0 square miles. The gold mines are scattered irregularly through th band, the greater number being to the eastward of Halifax. T auriferous districts are found to contain numerous veins of qua from one inch to six feet in thickness, running continuously in ma cases for several miles. Nearly all these veins contain gold, but, elsewhere, only a certain percentage are rich enough to work. Th carry the gold in visible grains imbedded in the quartz, and in t various sulphides of copper, lead, iron, etc., invariably found in the The width of the veins usually worked varies from four to twe

inches, but in some cases they are found to be highly auriferous when much wider.

These veins carry gold in amounts varying from a trace up to several ounces, and, in common with auriferous veins of other countries, frequently present it in the form of "pay streaks" or rich zones in the vein. These pay streaks are of varied width and depth, and are frequently very rich. In the Sherbrooke district one of these rich deposits was followed to a depth of 600 feet. The quartz surrounding these richer portions of the veins varies in value from three to ten dollars a ton. Other veins again show a uniform yield, not exceeding one-half to three quarters of an ounce to the ton for long distances.

Among the more prominent districts at the present time may be mentioned the Salmon River Mines. Here work has been carried on for several years on a vein of quartz from three to six feet wide. Several shafts have been sunk to a depth of about 150 feet, and ore has been extracted from a portion of the vein about 800 feet long. The quartz is crushed in a stamp-mill driven by water power, and placed about a quarter of a mile from the mine. There are eight batteries, each holding five stamps, weighing about 700 lbs. each complete. The average yield from the quratz has varied between 7 cwts. and one ounce to the ton. Owing to the size of the vein and the cheapness of the water power crushing, this ore could be profitably treated even if the value of the gold yield fell to five dollars, or say twenty shillings to the ton. Since the opening of the mine 33,253 tons of quartz have been crushed, and yielded 18,047 oz. of gold. This mine can be taken as a sample of others now working in the Province, but it will be understood that the narrower the vein the richer its contents must prove, as the expense of mining increases rapidly with the greater amount of dead work. At Montagu, Rawdon, Oldham, Stormont, and Lake Catcha, profitable mining has been carried on for a number of years.

However tempting the prospects of the rich quartz veins may prove to the miner, the great future of gold mining in Nova Scotia, lies in the so-called "low grade" ores. In many of the districts are met wide belts of slate and quartzite, intersected by quartz veins, both the veins and the rocks being more or less auriferous. Experience in the Western States has shown that ore such as this, mined in large quantities and crushed and amalgamated in large mills of 75 to 100 stamps, pays well even when worth not more than $4 a ton. Trials on a working scale have been made of such ores as they

occur in this Province, and the field appears even more promising here than in any other gold mining country.

At Sherbrooke and Mount Uniacke large lots of this ore have been quarried and crushed in small mills, and the results have shown that such operations, if conducted on a large scale, with approved appliances, would pay well. The values of these crushings have averaged from 3 to 7 dwts. to the ton, and it can be safely asserted that nowhere can labor and the usual supplies of mining camps be procured more cheaply than in Nova Scotia.

ALLUVIAL GOLD.

In Nova Scotia, contrary to the history of most gold mining countries, alluvial work has played an insignificant part. Small amounts of gold have been procured by alluvial work at Tangier, Waverley, and Moose River, but no systematic attempts have been made to test the old river courses, or the still waters, etc., of the present drainage systems, which run for the most part transversely to the strike of the veins.

MINING.

The veins dip at all angles and are invariably open by shafts sunk on the dip of the vein. This is not perhaps quite according to mining text-books, but experience shows that it is best adapted to the veins and to the encasing strata of this country. The stopes are carried from shaft to shaft, a distance of from 80 too 200 feet, by underhand work, powder or dynamite being used. The firmness of the rocks makes the mines usually very dry, and the expense of pumping is small whenever the surface is properly drained. The cost of mining, there being little dead work, varies according to the size of the vein and the hardness of the encasing rock, from 50 cents a ton in the open cast work to $15 a ton in the narrow and tight bound veins. The quartz is crushed in stamp mills similar in general construction to those used in other parts of the world. The stamps weigh from 450 to 750 lbs., and fall at the rate of from 30 to 50 drops a minute. Mercury is fed into the mortar in which the stamps work at frequent intervals, and the coarse gold is amalgamated and retained around the dies in the bottom of the mortar. The mills in common use in the Province crush to a fine powder about a ton of quartz to each stamp, in a day's work; when quartzite and slate are being treated more rapid progress is made. The pulverised ore is carried by



water through fine screens and over copper plates amalgamated with mercury for the purpose of arresting the fine gold.

As already mentioned, the veins always carry sulphides, etc., of various metals, which include considerable amounts of gold. This gold is but partially arrested in the mill or on the plates, and usually passes into the refuse tailings. Assays show that these tailings when concentrated, are often rich enough to warrant attempts being made to save the gold, but hitherto no systematic attempts have been made in this direction.

All the auriferous ground in the Province is the property of the Government, and it issues leases for terms of twenty-one years. The areas are laid off in rectangular form, each area being 150 by 250 feet, with the shorter sides parallel to the general run of the veins and the beds of the district. The fee paid for each area is two dollars. Similar areas can be taken under prospecting licenses for the space of six months, on payment of a small registration fee. Provision is made whereby the holder of any lease can acquire by arbitration or by grant from the Government, the ground needed for mining purposes. In return the lessee is required, under risk of forfeiture, to employ forty days' labor on each of his leased areas, and to make periodic returns of this labor, and of all quartz sent to a mill.

Any person desiring to build a quartz crusher must procure a license therefor, and give bonds for the due discharge of his obligations, which are to keep an account of all quartz crushed, and to pay to the Government the royalty on all gold extracted. This royalty is at the rate of two per cent. on unsmelted gold, valued at $18 an ounce, and at the same rate on smelted gold, valued at $19 an ounce. By this arrangement the miner, having delivered his quartz to the mill owner, is free from any responsibility about the royalty, as the Government looks to the licensed mill owner for it.

IRON ORES.

This, perhaps the most important of our mineral resources, has not as yet received attention at all commensurate with its value. The ores are of the most varied species, and frequently very pure. They are generally accessible, near water or railway transport, and none of them at any great distance from coal. Beginning at the western end of the Province, titaniferous iron sand is met at St.

Mary's Bay, and the trap rocks forming the south side of the Fundy yield abundant indications of specular and magneti Clementsport and Nictaux are beds of red hematite and ma formerly worked to a small extent in charcoal furnaces. Fr point as far west as Windsor, specular, red hematite and bog found, but little is known of their extent or value. Simil sometimes highly manganiferous, are met between Winds Truro, at Goshen, Maitland, Brookfield, etc. The following of limonite from the last named place is of a very pure ore:—

Water	11.36
Silicious matter	1.54
Phosphoric acid	trace.
Sulphuric acid	none.
Magnesia	trace.
Metallic iron	60.00

On the north side of the Bay of Fundy the limonite ores donderry are well known. Their passage has been traced f miles along the range of the Cobequid Hills, and they ha worked for many years at the Acadian Mines. Large amou variety of spathic ore are mined and smelted with the limoni a good grade of pig iron made, part of which is converted in etc. There are two large blast furnaces, with rolling mills, fo etc., and from 40,000 to 60,000 tons of ore are annually s The following analysis will show the character of the iron or of the iron made at this establishment:

	Micaceous Hematite.	Limonite.
Peroxide of iron	96·93	82·65
Oxide of manganese		·25
Alumina	·33	·56
Lime	·04	·15
Magnesia	·11	·10
Phosphoric acid	·07	·38
Sulphuric acid	·03	·02
Water hygroscopic	·03	·31
Water combined	·79	10·51
Insoluble	1·26	4·79
Metallic iron	67·85	57·85

Spathose Ore (Siderosiderite.)

Insoluble silicious matter	·47
Calcic carbonate	·59
Ferrous "	69·20
Manganous"	1·37
Magnesic "	28·73
Ferric oxide	·08

Analysis and tests by Riehle Bros.

Bar iron ductile and fine grained. Tensile strength. 60,000 lbs. per square inch, and elongation 33 per cent.

	No. 1 Pig.	Sleman's best Bar Iron.
Silicon	3·621	.280
Graphitic carbon	3·730	.....
Combined carbon	·390	·096
Sulphur	·002	trace.
Phosphorus	.198	·035
Manganese	1·126	·041
Iron	90.933	99·548

Iron ores are known at Pugwash, Wallace, Joggins, Clark's Point, etc., north of the Cobequid Hills.

The Londonderry iron ore bearing ground passes north of Truro and extends into Pictou county, and may be said to terminate at Cape George in Antigonish county. On entering Pictou county near the line of the Intercolonial Railway, are met widespread indications of specular ore, which at several points show veins of workable size. This specular ore ground extends to the head of the East River, a distance of about twenty miles, and carries ore veins which, as proved on the Watson and the Weaver properties, attain a thickness of fifteen feet. South of this band are deposits of limonite ores, which however, are yet little known. In the vicinity of Springville, between the specular ore and the Pictou coal field, are large and valuable beds of limonite, sometimes highly manganiferous, and bedded red hematites attaining a thickness at some points of from 20 to 40 feet. Among the more prominent localities holding these ores may be mentioned Springville, Bridgeville, Blanchard, Little Blanchard, Webster's Mountain and Fail Brook. On Sutherland's River these ores approach the eastern end of the coal field, and the Watson ore

bed at Fall Brook is about two miles from the Vale Colliery, and is about fifteen feet in width. Still further east near the line of the New Glasgow and Cape Breton Railway are deposits of spathic iron ore and of clay ironstone. These ores extend for many miles, until the measures carrying them are cut off by the Gulf of St. Lawrence. An exposure of a bed of red hematite three feet thick at Arisaig marks the termination of this district, which is fifty miles long, and attains a maximum width of about six miles. Clay ironstone is met at several points in the Pictou coal field and between New Glasgow and Pictou.

The following analyses will show the character of the Pictou iron ores:

	Limonite.	Clay Ironstone	Specular.	Red Hematite.
Water	7·702	2·132	.....	.....
Iron Peroxide	87·925	45·361	97·52	65·26
Alumina	trace.	16·962	.....	5.59
Silica	3 000	·780	3·20	25·68
Manganese Binoxide	trace.	.....	.....	.....
Lime	do.	trace.	.91	1.88
Magnesia	·500	1·655	.....	1 05
Sulphur	trace.	·612	.06	.....
Phosphorus	do.	trace.	trace.	.....
Metallic iron	65 54	35·00	68·33	43·4
Carbonic acid	.....	.....	.....	.....

It may be remarked that in Pictou county the conditions for making iron and steel cheaply are unsurpassed, as within a few miles are collected numerous iron ores, fluxes, and good furnace fuels, and there is railway and water communication with all parts of the Dominion.

In Cape Breton indications of valuable iron ores are frequently met, but hitherto there has been little inducement to test or develop them. Near East Bay a bed of red hematite ore from 4 to 13 feet wide has been traced several miles. The following analysis of it is from the records of the Geological Survey of Canada:—

Iron Peroxide	85·057
Silica	5·130
Sulphur	·075
Phosphoric acid	·032
Metallic iron	57·526

At Whycocomah, on the Bras d'Or Lake, several beds of red

hematite and magnetic iron ore have been followed for some distance, by trenches and natural exposures. Both these deposits are close to good shipping places.

Louisburg, Gabarus, Big Pond, Lake Ainslie, and St. Peter's, among other localities, may be mentioned as likely to contain valuable ores.

The conditions upon which iron ore lands are leased by the Government are similar to those regulating the coal properties, and will be referred to further on.

There are numerous localities yielding iron ores besides those I have briefly touched upon. Among these may be mentioned Salmon River Lakes, Boylston, and Manchester, in Guysboro' county, where valuable deposits of specular ore have been superficially tested. At Stewiacke, Riversdale and Musquodoboit are ores of red hematite and limonite, while at numerous points over the Province are deposits of bog iron ore, often of good quality, and a valuable accessory to local smelting operations.

COPPER ORES.

Indications of copper ore are widespread throughout the Province, and although promising at several points, explorations have, in a few instances only, been pushed far enough to show workable deposits. The trap of Annapolis and Kings counties shows native copper, with carbonates, etc. Among the more promising localities may be mentioned Margaretsville, Digby, and St. Mary's Bay, Cape d'Or, etc. The carboniferous measures of Pictou, Cumberland, and Antigonish counties frequently show deposits of the vitreous sulphide and of carbonate of copper, and some of them may prove valuable.

In the vicinity of College Lake, in Antigonish county, several valuable deposits of copper pyrites have been thoroughly tested. It is believed that large amounts of ore running from three to eight per cent can be obtained here, but the depression in the copper trade has prevented development. In Cape Breton the precambrian felsites frequently show copper pyrites. These have been prospected with promising results at Gabarus and French Road, and at Coxheath near Sydney. At the last named locality a large amount of work has been done, showing the presence of immense masses of ore carrying from 3 to 8 per cent of copper. Preparations are now being made to smelt these ores into a matte, a business for which the locality affords every facility in the way of fuel, fluxes, shipping ports, etc. Other localities are Cape North, Cheticamp, East Bay, Benacadie, etc.

LEAD ORE.

In this Province the only source of galena appears to be the carboniferous marine limestone series. At Gay's River, Shubenacadie, and Stewiacke it is frequently met in these rocks. At Smithfield, Upper Stewiacke, the limestones carry at several points large masses of galena, with copper and iron pyrites and calcite, and small amounts of silver are reported to be present in the galena.

ANTIMONY.

This ore is known at several localities in the Province, but has hitherto only been worked at Rawdon, Hants county. Here a vein from 6 to 20 inches in width has been successfully worked during the past two years, and has yielded a very pure ore, all of which has been exported to England. The exports during the year 1884 were 463 tons, valued at $17,865, and during the year 1885, 758 tons, valued at $33,095. At present only the higher grade ore is shipped from this mine, and the accumulations of low grade ore await treatment.

MOLYBDENUM.

This mineral occurs at Gabarus in Cape Breton, and at Hammond's Plains and Musquodoboit, in Halifax county.

MANGANESE.

There are numerous localities in the Province which have yielded rich deposits of these ores. At Tenny Cape, Hants Co., Onslow, Colchester Co., and Salmon River, Cape Breton Co., small shipments are annually made of very rich ore, containing from 89 to 98 per cent of binoxide, with mere traces of iron. The exports are principally to glass makers in the United States, and the ore brings from $75 to $100 a ton at the mines. Few shipments are made of the low grade ores, which are abundant, and a large trade could be done if a start were once made. Among other localities may be mentioned Pictou, Bridgeville, and Glengarry, Pictou Co., and Amherst, Cumberland Co.

Beds of wad, or bog manganese, are found at numerous points, but hitherto it has not proved profitable to export them.

GYPSUM.

This mineral occurs in the Province as soft or hydrated, and as hard or anhydrous gypsum. It is exposed in beds, varying in thickness from a few inches up to 200 feet, and is also found in fine grains and veins in the shales, marls, and limestones which are usually associated with it. In the Maritime Provinces it occurs in the carboniferous marine limestone formation, already referred to in connection with the manganese ores, and wherever the limestones appear it is usually at no great distance. It is so widely scattered through the northern and eastern parts of Nova Scotia that a detailed list of its exposures could not be given. It has been mined chiefly at Windsor, Cheverie, Walton, Maitland and Hantsport on the Bay of Fundy, and at Lennox Passage, Baddeck, and St. Ann's, in Cape Breton. Among the minerals found in the gypsum may be mentioned glauber salt, common salt, magnesium carbonate, sulphur, and several varieties of borates, similar to the Peruvian Ulexite and "Tiza." Should these borates be found in any amount in our gypsum beds they would undoubtedly prove of great value.

The Nova Scotia deposits of gypsum are on an unequalled scale, the beds being frequently traceable for miles by exposures presenting faces 50 feet in height. In Antigonish county it occurs on St. George's Bay as a crystalline cliff, 200 feet high, and similar exposures are met at Plaster Cove, Mabou, and many other localities in Cape Breton. This scale of exposure, and frequent proximity to good shipping places, has materially aided the output of the mineral, and it can at many points be placed on board for 50 or 60 cents a ton.

The anhydrite is found imbedded in the soft gypsum, but is seldom exported. The exports of gypsum are almost entirely to the United States, where it is ground as a fertilizer, or boiled and ground for finishing houses, cornices, etc., according to its purity and color.

It is said to be a suitable dressing for tobacco and cotton lands, and large quantities are mined for this purpose in Virginia. The gypsum is used to a very limited extent in Nova Scotia for agricultural purposes; in fact, in our best farming districts nature has disseminated this useful fertilizer very freely. A large mill in New Brunswick supplies the local market with the prepared article as required for architectural purposes. The annual exports, chiefly from Windsor and its vicinity, on the Bay of Fundy, vary from 80,000 to 140,000 tons, valued at about 95 cents a ton.

MINERAL PAINTS.

As might be anticipated in a country yielding iron and manganese ores, the different varieties of ochres and umbers are frequently met. Among the various localities yielding these mineral paints may be mentioned Londonderry, Onslow, Stewiacke, Maitland, Chester and Kentville. Small amounts are dried and ground for local use, but the trade is almost exclusively supplied from foreign sources.

BARYTES.

This mineral occurs at Five Islands, Bay of Fundy; River John, Pictou County, and at Stewiacke, Colchester County. At the latter place about 300 tons were mined last year, and was worked up at Halifax in the manufacture of paints, etc.

MINERAL WATERS.

At numerous localities throughout the Province mineral springs have been known for many years, and are used for various complaints. Few of these waters have been analysed, but they are worthy of careful examination, as the presence of mineral waters of undoubted excellence has frequently done much to attract visitors, and produce benefits important if not conspicuous.

In the gypsiferous districts brine springs are frequently met. Some of the springs in the early days of the settlements were utilized by those living in the vicinity, and considerable amounts of salt manufactured for home use. Now the imported salt has so lowered prices that salt-making has ceased to be a Provincial industry. The presence, however, of these brine springs is of importance in relation to the possibility of beds of salt being connected with the gypsum beds. Should examination prove this to be the case, a large and valuable industry would be revived. The same speculative interest attaches to the instances of sulphur occurring in the gypsum and gypsiferous marls.

BUILDING STONES.

The building stones of Nova Scotia are principally granite and sandstone. The various grades of the latter are procured mainly

from the upper divisions of the carboniferous system. Pictou, Colchester, and Cumberland counties, therefore, are the principal producers. Many of the quarries in these counties have yielded stone for the construction of the public buildings of the Maritime Provinces, and of the New England cities. The granite of Halifax, Shelburne, and Ship Harbor is of excellent quality, and is largely used in foundations, steps, etc.

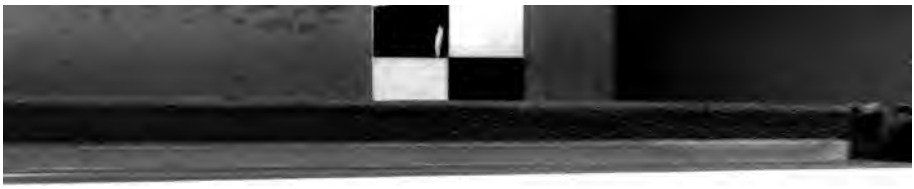
Slates of excellent quality occur in large quantities at Rawdon, Hants Co., and at several other localities, but at present they are in little demand, as roofs are covered with wooden shingles.

Brick clays of excellent quality abound in many places, and are worked to a small extent. The cheapness of wood has hitherto retarded the introduction of brick as a material for building purposes, except in the towns. Brick buildings are gradually coming into more general favor, and a new market has been opened up in the manufacture of drain tiles, which are used in large quantities.

Among miscellaneous minerals may be mentioned plumbago, fire clay, refractory stone, soapstone, felspar, kaolin, infusorial earth, etc. These are known to exist in the Province at numerous points, and in quantities admitting of economic development, but at present the demand is not large enough to direct particular attention to them.

TENURE OF MINERAL LANDS.

The grant of lands to the early settlers in this Province contained no regular reservation of minerals. In some instances gold, silver, and precious stones only were reserved; in other cases the gold, silver, iron, copper, lead, etc., were retained for a source of revenue to the Crown. After the agreement with the General Mining Association, the Government passed an Act by which they retained in previous grants the gold, silver, coal, iron, copper, lead, tin and precious stones whenever reserved, and for the purposes of revenue made the above reservations in all future grants. This Act releases to the owner of the land all gypsum, limestone, fireclay, barytes, manganese, antimony, etc., etc., and any of the above reservations, whenever they are not specified in the grant. There is now a complete list published of all the grants, but information as to every grant can be obtained at the Crown Lands Office. The Department of Public Works and Mines is charged with the collection of revenue from the mines, the enforcement of the



Mines Regulation Act, etc. Reference has been already made to the mode of granting gold licenses and leases, and the same remarks apply to silver and its ores. For all other minerals held by the Government for revenue purposes a somewhat similar system is adopted.

On application a tract not exceeding five square miles, called a License to Search for minerals other than gold and silver, can be obtained for one year at a cost of $20. Out of this the applicant may select, before the expiration of the term of one year, a tract of 640 acres (one square mile), for which he pays $50. This is termed a right to work, and lasts for two years, and can be renewed for a further term of one year, on payment of $25. During the existence of this right to work, the holder, if he commences *bona fide* mining operations, is entitled to a lease for twenty years, and renewals for three further terms of equal length. Provisions are made for securing the surface ground needed for mining, for proper returns, and for forfeiture on neglect to comply with the requirements of the lease, etc.

All the regulations connected with the leasing and working of the Provincial mines are framed with the view of affording all proper and necessary facilities to those desirous of entering into mining operations, and among not the least of these advantages may be mentioned the security of the title granted and registered by the Government.

The following are the rates of royalty paid by those holding under the Government:

Each licensed mill owner shall pay, or cause to be paid, in money, in weekly or other payments, as the Commissioner of Mines shall order, to the Commissioner or to the Deputy Commissioner for the district, a royalty of two per cent. on the gross amount of gold obtained by amalgamation or otherwise in the mill of such licensed mill owner, at the rate of nineteen dollars an ounce troy for smelted gold, and eighteen dollars an ounce troy for unsmelted gold, and of two per cent. on the silver, at the rate of one dollar per ounce troy.

Coal.—Seven cents and one half of a cent on every ton of two thousand two hundred and forty pounds of coal sold or removed from the mine, or used in the manufacture of coke or other form of manufactured fuel.

The words "removed from the mine," in the preceding section, shall not be held to apply to coal used for domestic purposes by the workmen employed in and about each mine; nor to coal used in

mining operations in and about the mine from which such coal has been gotten; but coal so used shall not be liable to pay royalty.

Copper.—Four cents upon every unit, that is upon every one per cent. of copper contained in each and every ton of two thousand three hundred and fifty-two pounds, of copper ore sold or smelted.

Lead.—Two cents upon every unit, that is, upon every one per cent. of lead contained in each and every ton of two thousand two hundred and forty pounds, of lead ore sold or smelted.

Iron.—Five cents on every ton of two thousand two hundred and forty pounds of ore sold or smelted.

Tin and Precious Stones.—Five per cent. on their values.



FISHERIES.

The fisheries of Nova Scotia have long been celebrated. No other country produces so great a variety of fish, in such inexhaustible quantity. Of $18,386,103, the aggregate value of the fisheries of the Dominion of Canada for the year 1887, the Province of Nova Scotia alone produced $8,379,782. The value of the Nova Scotia fisheries in the previous year was even higher than this. The decrease, however, was due to lower prices, and not to any scarcity of fish. The following information is taken from the official returns to the Department of Marine and Fisheries for the Dominion.

The Deputy Minister of Fisheries for the Dominion, in his report for 1887, says :

"All branches of the deep-sea fishery appear to be in a healthy state. There is a slight decrease in the number of quintals of dried cod, but this is more than made up by the increased catch of pollock and haddock.

"The salmon fishery is apparently in a satisfactory condition, and there are good grounds for expecting that this king of fishes will ere long be as plentiful as ever in the waters of Nova Scotia.

"While a falling off is noticed in the number of canned lobsters, there is a large increase in the quantity shipped alive or in shell to the United States markets. As the Inspector expresses it in his report: 'This trade is fast assuming large proportions, yields fair profits, and is not so exhaustive to the fishery, as no lobsters can be shipped under ten inches and a half in length. During the fall and winter months good prices are obtained for them.' There is no doubt but this is the trade of the future."

Number; Tonnage and Value of Vessels and Boats engaged in the Fisheries; Quantity and Value of Fishing Material; Kinds and Quantities of Fish, and the Total Number of Men Employed; in Nova Scotia, for the year 1887.

	Annapolis.	Antigonish.	Cape Breton.	Colchester.	Cumberland.	Digby.	Guysboro.	Halifax.	Hants.	Inverness.	Kings.	Lunenburg.	Pictou.	Queens.	Richmond.	Shelburne.	Victoria.	Yarmouth.	TOTALS.	
Number of Vessels	16	.....	12	.....	2	58	35	83	.....	17	9	105	3	22	64	54	6	84	669	
Tonnage of Vessels	128	.....	230	.....	72	1200	1580	2005	.....	511	100	10102	102	127	2112	3760	215	4804	28430	
Value of Vessels	$3800	.....	3350	.....	2200	43400	62700	65500	.....	17200	2500	500000	2200	62210	45880	171675	6100	238245	$1276860	
Number of Men on Vessels	31	.....	77	.....	11	460	297	502	.....	131	30	1081	12	239	547	774	29	1112	6250	
Number of Boats	225	228	721	72	103	350	1774	2005	160	878	64	1881	201	602	1000	93	000	675	13301	
Value of Boats	$3095	4800	24774	1775	2195	14859	45107	74214	3168	21800	1405	34325	6180	11182	16541	25823	15830	15220	$322750	
Number of Men on Boats	307	467	1659	145	188	902	2790	2839	193	2437	112	2802	440	712	1084	1854	1351	1040	21732	
Nets (fathoms)	12430	48400	58150	13330	2549	47090	994780	986160	21615	100550	34221	501000	32950	32556	361000	145410	52580	86300	3043681	
" (value)	$6070	41500	25541	3020	1895	31040	128775	83540	4021	45700	8223	90835	10440	12237	82830	23372	21815	30840	$657736	
Weirs (number)	16	.....	.....	24	7	21	14	505	8	68	41	3	.....	.....	.....	11	.....	14	732	
" (value)	$1650	.....	5850	200	2700	5800	103550	1200	680	11280	2000	.....	.....	.....	.....	18400	.....	41000	$197850	
Salmon (bbls.)	.....	.....	58	.....	6	.....	1185	2070	15	141	.....	.....	.....	.....	40	1	137	.....	3602	
" fresh, on ice (lbs.)	6700	91000	6830	8950	6000	1750	23000	69283	8780	46725	22170	33150	101500	34045	1000	6017	.....	27800	405850	
" smoked (lbs.)	.....	.....	100	.....	.....	.....	3000	6522	.....	.....	.....	2040	.....	1375	.....	.....	.....	.....	13037	
" in cans (lbs.)	.....	.....	13200	.....	.....	.....	4444	4130	.....	12000	.....	.....	800	.....	.....	.....	102	.....	34676	
Mackerel (bbls.)	18	1000	3278	5	25	1300	10839	12018	.....	11050	54	10027	584	1050	10784	3417	2807	8014	91348	
" (cans)	.....	.....	1200	.....	.....	.....	26810	17200	.....	10801	.....	.....	1000	.....	.....	.....	7227	.....	58163	
Herring (bbls.)	5092	905	7824	50	1135	6555	20272	30944	185	10527	3850	40293	2001	1743	9013	10248	4784	13065	161140	
" smoked (boxes)	49135	.....	100	1440	30	25000	.....	.....	.....	.....	10085	.....	.....	.....	.....	.....	.....	120	85910	
Alewives (bbls.)	25	520	305	10	713	.....	2052	851	1180	745	75	481	20	4043	408	959	10	4130	16930	
Cod (cwt.)	2857	815	28140	172	465	75810	45439	60930	92	44140	1418	212034	1460	30340	40806	104670	30062	105509	704809	
Cod Tongues and Sounds (lbs)	19	.....	.....	.....	.....	70	9	664	.....	65	.....	230	.....	32	190	.....	20	115	1398	
Pollock (cwt.)	548	.....	35	.....	205	42957	.....	.....	.....	810	461	20658	.....	3	.....	3250	30	3315	72100	
Hake (cwt.)	2276	3800	.....	75	10	6505	.....	6038	.....	.....	.....	117	1017	.....	.....	.....	.....	195	20023	
" Sounds (bbls.)	2345	3800	.....	.....	150	11080	.....	6012	.....	17500	.....	1358	800	.....	.....	.....	165	100	43010	
Haddock (cwt.)	2712	1500	2093	.....	470	89285	11288	3807	65	4201	333	54086	14	482	8505	9548	1419	7186	196027	
Halibut (lbs.)	39907	.....	60078	.....	3400	315110	21000	232928	550	7800	400	198680	.....	19245	.....	92700	600	191680	1184788	
Shad (bbls.)	5	.....	36	385	134	15	.....	.....	277	15	418	.....	.....	.....	.....	.....	.....	15	1300	
Bass (lbs.)	3400	6800	.....	.....	.....	.....	100	.....	4705	.....	.....	.....	.....	.....	.....	.....	.....	.....	15005	
Trout (lbs.)	400	9300	11370	3250	1000	500	31240	20080	.....	48570	2500	8444	.....	5505	.....	6000	.....	2050	150409	
Squid (bbls.)	.....	.....	26	.....	.....	.....	2005	21000	.....	1225	.....	740	.....	51	.....	.....	1225	.....	30237	
Smelts (lbs.)	.....	41000	21300	28985	125257	1000	28300	20180	3000	48020	9000	12870	27000	28500	11000	11000	1000	52800	163972	
Eels (bbls.)	.....	440	244	.....	10	50	238	209	.....	686	10	264	555	146	114	159	29	446	3740	
Oysters (bbls.)	.....	240	46	.....	120	.....	.....	.....	.....	1000	.....	.....	10	.....	.....	.....	210	.....	1716	
Lobsters (cans)	.....	108000	464290	.....	395000	64460	1181704	1320844	.....	199748	.....	340000	592100	169004	832900	422712	178002	413100	6686023	
Fish Oil (gallons)	2684	2170	11949	.....	180	110475	16213	52382	18	22195	1645	102501	647	10491	10617	30003	13146	22910	483366	
Fish Guano (tons)	.....	.....	102	.....	.....	.....	20	.....	.....	50	.....	257	.....	.....	.....	.....	.....	150	579	
Fish used as Bait (bbls.)	2404	1600	2864	50	890	19810	4000	4806	.....	2997	153	3937	1400	524	5	15896	3247	475	65014	
Fish used as manure (bbls.)	2358	.....	.....	.....	.....	8735	.....	.....	.....	.....	2297	2845	4800	2865	.....	.....	.....	4760	28570	



Recapitulation of the Yield of Fisheries in Nova Scotia, 1887.

Kinds of Products.	Quantities.	Value.	Total.
Salmon, pickled	3,662 bbls.	$58,592 00	
" fresh	495,350 lbs.	99,070 00	
" smoked	13,837 lbs.	2,767 40	
" preserved in cans,	34,776 cans.	5,214 90	
			$ 165,644 30
Mackerel, pickled	91,348 bbls.	1,096,176 00	
" preserved in cans	58,168 cans.	6,979 56	
" shipped fresh	357,600 lbs,	17,880 00	
			1,121,035 56
Herring, pickled	181,146 bbls.	815,157 00	
" smoked	85,910 boxes	21,477 50	
			836,634 50
Alewives, pickled	16,290 bbls.	73,305 00	
" smoked	120,000 doz.	960 00	
			74,265 00
Cod, dried	794,309 cwt.	3,177,236 00	
" boneless	50,000 lbs.	2,000 00	
" Tongues and Sounds	1,398 bbls.	13,980 00	
			3,193,216 00
Pollock, dried	72,490 cwt.		289,960 00
Hake, dried	20,023 cwt.	80,092 00	
" Sounds	43,626 lbs.	43,626 00	
			123,718 00
Haddock, dried	198,027 cwt.	792,108 00	
" fresh	198,000 lbs.	7,920 00	
Finnan Haddies	127,000 lbs.	5,080 00	
			805,108 00
Halibut	1,184,288 lbs,		118,428 80
Shad	1,300 bbls.		11,700 00
Bass	15,065 lbs.		903 90
Trout	155,469 lbs.		15,546 90
Squid	30,320 bbls.		121,280 00
Smelt	463,672 lbs.		27,820 32
Eels	3,740 bbls.		37,400 00
Oysters	1,716 bbls.		5,148 00
Lobsters, preserved	6,688,923 cans.	802,670 76	
" shipped fresh	1,523 tons.	53,305 00	
" alive. Shipped to U. S. and sold to American Smacks	5,225,531	209,021 24	
			1,064,997 00
Fish Oil	483,366 galls.		193,346 40
" Guano	579 tons.		14,475 00
" used as bait	65,014 bbls.		97,521 00
" " manure	28,570 bbls.		14,285 00
Amount sold in Halifax markets,			42,400 00
Miscellaneous, not included in columns			4,949 00
Total			$8,379,782 68



Statement of Value of Fisheries in each County in the Province of Nova Scotia for the Year 1887.

Counties.	1887.
Annapolis	$101,556 55
Antigonish	101,998 50
*Cape Breton	208,237 78
Colchester	9,072 10
Cumberland,	73,447 92
Digby	1,886,331 20
Guysborough	657,166 08
Halifax	1,015,027 68
Hants	11,818 10
*Inverness	485,937 98
Kings	40,826 75
Lunenburg	1,763,901 50
Pictou	133,408 90
Queens	210,231 58
*Richmond	548,270 30
Shelburne	550,193 78
*Victoria	239,841 98
Yarmouth	870,514 00
Total	$8,379,782 68

*Note.– The four Counties in Cape Breton Island, viz.: Cape Breton, Inverness, Richmond and Victoria, give a total value of fish caught of $1,554,288.04. The value of fish caught in the other fourteen counties of Nova Scotia proper is given at $6,825,494.64.

Table showing the Value of the Fisheries of Nova Scotia, for the Eighteen Years from 1870 to 1887, inclusive.

Year.	Value.
1870	$4,019,424 07
1871	5,161,030 90
1872	6,016,835 00
1873	6,577,086 51
1874	6,652,301 55
1875	5,573,851 58
1876	6,029,049 94
1877	5,527,858 37
1878	6,131,599 64
1879	5,752,936 20
1880	6,291,061 46
1881	6,214,781 50
1882	7,131,418 36
1883	7,689,374 75
1884	8,763,779 36
1885	8,288,922 87
1886	8,415,361 45
1887	8,379,782 68

Table showing the number and value of Vessels and Boats, Nets and Weirs engaged in the Fisheries of Nova Scotia, and approximate estimates of the value of other material not included in the returns.

660 vessels		1,275,880
13,191 boats		322,750
3,543,581 square fathoms of nets		657,736
732 weirs		197,360
		2,453,736
*Canning establishments	150,825	
Guano "	11,500	
Seines (not included in returns)	38,031	
Lobster traps, &c.	66,937	
Hand lines, trawls, &c.	69,159	
Steamers, smacks, punts, canoes, &c	38,573	
Fishing piers, houses and other industries	111,280	
		486,325
Total		2,939,061

*Note.—The second part of the above table is exclusive of the four Counties of Cape Breton.

STATISTICS RELATING TO NOVA SCOTIA.

COMPILED FROM LAST CENSUS (1881) OF DOMINION.

Total Population:

Males	220,538	
Females	220,034	
		440,572

Population in 1871	387,810
" 1881	440,572

Origins of People:

African	7,062
Dutch	2,197
English	130,225
French	40,141
German	39,904
Iceland	179
Indian	2,125
Irish	66,067
Italian	153
Jewish	32
Russian	30
Scandinavian	556
Scotch	146,027
Spanish	350
Swiss	1,860
Welsh	1,158
Not given	2,506

Where born:

Native born	405,687
England	4,813
Ireland	5,600
Scotland	10,851
United States	3,004
Not given	10,617

Persons over 60 years of age	34,228
" " 70 " "	13,976
" " 80 " "	3,853
" " 90 " "	473

School-going Children:

Males	44,308
Females	40,607

Occupations of the People:

Agriculture	63,684
Commercial	15,108
Domestic	7,832
Industrial	39,956
Professional	4,844
Not classified	10,276

Number of Churches	1,055

Immovable Property and Shipping:

Number of owners	67,129
Acres of land owned	7,446,065
Town lots owned	22,452
Number of houses owned	69,932
Warehouses, factories, &c	17,508
Barns and stables	65,308
Steam vessels	44
Tonnage of ditto	4,446
Sea-going sailing vessels	1,960
Tonnage of ditto	441,929
Barges and small crafts	232
Tonnage of ditto	3,385
Occupiers of land	55,873
Owners of ditto	51,710
Tenants	3,929

Land occupied (acres)	5,396,382
" improved "	1,880,644
" under crop "	942,010
" in pasture "	917,010
" orchards "	21,624

Animals and their Products:

Horses	46,044
Colts	11,123
Working oxen	33,275
Milch cows	137,639
Other horned cattle	154,689
Sheep	377,801
Swine	47,256
Cattle killed or sold	63,389
Sheep " "	151,245
Swine " "	56,259
Pounds of wool "	1,142,440
Pounds of honey "	24,500

Field Products:

Acres	41,855
Spring wheat (bush.)	522,602
Winter " "	6,649
Barley "	228,748
Oats "	1,873,113
Rye "	47,567
Peas and beans "	37,220
Buckwheat "	339,718
Corn "	13,532
Potatoes (acres)	60,192
" (bush)	7,378,387
Turnips "	1,006,711
Other roots	326,143
Hay (acres)	519,856
" (tons)	697,731

Various Products:

Home-made butter (lbs.)	7,465,285
" cheese "	501,655
" cloth (yards)	1,329,817
" linen "	68,038
Apples (bush.)	908,519
Grapes (lbs.)	35,015
Other fruits (bush.)	18,485
Maple Sugar (lbs.)	217,481

Products of Forest:

Pine (white) cubic feet	125,451
" (red) "	35,726
Oak "	22,876
Tamarac "	106,069
Birch and maple "	549,330
All other "	4,093,553
Pine logs (number)	497,785
Other " "	2,250,593
Masts and spars (number)	8,703
Staves	13,147
Lathwood (cords)	5,585
Tanbark "	10,843
Firewood "	637,084

Fisheries:

Vessels and boats	13,969
Men	24,636
Shoremen	2,291
Nets (fathoms)	1,171,394
Codfish (quintals)	140,831
Haddock "	128,578
Herring (barrels)	140,831
Mackerel "	120,242
Other fish "	40,683
Cans of lobsters	3,841,476
Fish oil (gallons)	275,352

*Raw Mineral Products:**

Gold (ounces)	15,167
Silver "	22
Copper ore (tons)	2,000
Iron ore "	53,878
Manganese "	316
Other ores "	4,424
Coal "	1.013,345
Lump gypsum "	177,081
Phos. of lime "	165
Building stone (cubic feet)	214,819

*From imperfect returns, quantities no doubt underestimated.

SOME OF THE PRINCIPAL INDUSTRIES OF THE PROVINCE.

	Hands empl'd.	Yearly Wages.	Value of Raw Material.	Value of Articles.	Capital Invested.
		Dollars.	Dollars.	Dollars.	Dollars.
Agricultural Implements	11	1,160 00	2,050 00	3,840 00	.....
Bakeries	243	73,418 00	445,310 00	639,690 00	162,825 00
Blacksmiths	1403	264.574 00	261,148 00	687,817 00	230,996 00
Boots and Shoes	1024	219,598 00	417,357 00	754,128 00	174,232 00
Brick making	226	26,790 00	11,178 00	64,775 00	8,413 00
Cabinet making	340	53,075 00	79,246 00	243,150 00	177,455 00
Carding Mills	135	16,824 00	195,119 00	236,676 00	57,540 00
Carpentering	519	120.134 00	121,059 00	293,088 00	107,783 00
Carriage making	471	113,144 00	90,565 00	263,834 00	132,821 00
Saw Mills	4160	549,480 00	1,446,858 00	3,094,137 00	1,640,847 00
Tanneries	531	137,057 00	568,762 00	875,505 00	395,110 00
Shingle making	266	22,109 00	29,296 00	69,344 00	62,546 00
Printing	310	111,975 00	72,950 00	270,800 00	171,325 00
Sash Factories, etc	112	31,616 00	67,158 00	131,270 00	123,820 00
Ship Building	1954	535,954 00	778,865 00	1,755,330 00	527,196 00
Soap and Candle making	29	7,725 00	82,000 00	106,000 00	61,300 00
Tobacco Factories	102	13,919 00	33,100 00	55.110 00	36,500 00
Wood Turning	70	22,470 00	33,550 00	84,665 00	25,180 00
Musical instruments	45	21,573 00	23,052 00	67,245 00	48,229 00
Paints and Varnish	70	21,048 00	44,760 00	88,700 00	12,500 00
Rope and Twine making	100	23,000 00	86,000 00	130,000 00	260,000 00
Breweries	47	22,847 00	101,405 00	194,185 00	248,650 00
Aerated Waters	32	11,780 00	12,600 00	40,000 00	18,300 00
Boat Building	151	19,963 00	16,287 00	46,255 00	20,347 00
Cooperage	639	72,226 00	74,589 00	183,463 00	68,100 00
Dressmaking and Millinery	261	31,530 00	77,343 00	135,981 00	45,489 00
Foundries (iron and brass)	196	56,290 00	104,520 00	247,106 00	226,250 00
Flour and Grist Mills	498	78,013 00	924,341 00	1,200,762 00	422,298 00
Machine Works	514	175,417 00	188,934 00	542,017 00	478,500 00

Later Dominion Returns.

The foregoing figures relating to manufactures in Nova Scotia, are, as indicated, from the census tables of 1881, and were compiled for a hand-book of information previously published. These census returns have been supplemented to some extent by a return laid before the Dominion Parliament in 1885, the return being a number of "Reports relative to the manufacturing industries in existence in Canada." The reports were made by gentlemen appointed by the Dominion Government, whose duty was set out as being to procure "reliable "information as to the manufacturing industries in existence in "Canada, as regards the number of persons employed, the amount of "capital invested, the output thereof, the date of establishment, and "the progress of the several factories, and, in fact, all particulars that "will be of use in aiding the Government in legislation with refer-"ence thereto."

The gentleman who visited Nova Scotia was also the Commissioner for New Brunswick and P. E. Island. He reported that the time at his disposal was limited, and he was unable to visit every section of the Province, nor could he give attention to any but the largest establishments in places visited. The following is a comparative statement which the Commissioner submits in his report:—

Locality.	1878.		1884.	
	Hands employe l.	Yearly aggregate of W'kly Wages.	Hands employed,	Yearly aggregate of W'kly Wages.
Halifax and Dartmouth ..	1,398	458,031 60	2,668	882,312 00
Truro	115	37,486 80	272	108,715 68
New Glasgow	117	44,158 40	402	177,884 20
Londonderry: Iron Works	500	171,600 00	625	234,325 00
Amherst.....	158	56,357 60	435	188,859 00

Locality.	Capital invested in 1878.	Product or Output of 1878.	Capital invested in 1884.	Product or Output of 1884
Halifax & Dartmouth	2,261,925 00	3,015,905 00	3,226,633 00	6,770,880 00
Truro	99,291 00	132,389 00	269,000 00	313,131 00
New Glasgow	151,110 00	201,481 00	355,500 00	692,269 00
Lon'derry: Iron Works	330,120 00	440,160 00	1,460,000 00	550,200 00
Amherst..... ..	150.078 00	200,107 00	197,000 00	550,929 00



figures, it may be explained, do not cover farming, mining, ray operations, and embrace only certain sections of four counties of the Province.

llowing figures, also from the Commissioner's report, indi- minimum weekly wages of persons engaged in the callings er enumerated :—

lders	10 00
shoemakers	7 00
shoe manfs	7 50
d broom manfs	7 50
and mattress manfs	9 00
carpenters and ma-	
	9 00
	8 00
, &c	8 50
nders	10 00
iths	9 00
kers	9 00
	7 00
ders	8 00
akers	9 00
	10 00
oners	8 00
and sleigh manfs	8 00
	8 00
	9 00
d spice manfs	7 00
niths	10 00
nanfs	7 00
and rope manfs	7 00
d mantle makers	4 00
	15 00
	10 00
rs	12 00
e manfs	9 00
	7 50
men, machinists, &c,	9 50
hs	10 00
makers	9 00
and furriers	12 00
nfs	7 00
e manfs	7 00
s	9 00
machine workers	10 00
men	7 50
ths and bell-hangers	9 00
s	4 50
Marble workers	8 50
Match Manfs	7 00
Mineral Water and ginger beer manfs	8 50
Nail and tack manfs	8 00
Painters	10 00
Paint manfs	8 00
Plumbers and gasfitters	10 00
Photographers	12 00
Piano, &c., manfs	9 00
Printers	9 50
Picture frame makers	8 00
Paper and paper bag manfs	7 00
Paper box manfs	8 00
Planing millmen	9 50
Powder manfs	7 50
Roofers	9 00
Stove and tinware manfs	10 00
Shipbuilders	9 00
Shipsmiths	9 00
Sash, door and blind manfs	9 50
Sailmakers	9 00
Stonecutters	15 00
Saw and planing millmen	8 00
Steam and hot water heaters	9 00
Skate, axle and shovel manfs	8 00
Sparmakers	9 00
Ship knees manfs. and forgers	9 00
Sugar refiners	7 50
Tinsmiths	8 00
Trunk manfs	
Tanners, &c	7 00
Tobacconists	6 00
Tailors	10 00
Undertakers	9 00
Watchmakers and jewellers	12 00
Wharf builders, pile drivers, &c	9 00
Wood-working manfs	9 50
Waterproof manfs	7 00



MISCELLANEOUS NOTES.

Among other items of Nova-Scotia's lumber trade, the shipments of deals in the last two years were as follows :

	Superficial ft.
1887	82,959.589
1888	85,070,005

The following is the output of Nova-Scotia coal for the last three years :

1886	1,373,666	Long tons.
1887	1,670,838	" "
1888	1,776,128	" "

The increase in 1888 would have been still more, but for an accidental flooding of the Spring Hill mine ; and lack of shipping facilities from the Cape Breton mines.

The total sales of coal for the year 1888 amounted to 1,576,692 tons, against 1,519,684 tons in 1887. The home sales were 509,905 as compared with 469,464 tons in 1887. The Province of Quebec took 678,321 tons against 650,858 tons in 1887, and 538.762 tons in 1886. The sales to New-Brunswick were 214,630 tons against 186,511 tons in 1887. The sales to Newfoundland and Prince Edward Island show no change of importance.

The provincial Report of Mines for the year ending Dec., 1888, shows the following other items of interest in the mineral production of the province :

		1887.	1888.
Gold	Ounces	21,211	22,407
Gypsum	Tons	116,346	125,800
Barytes	"	400	1,100

The report states that during the past season, unusual interest has been taken in the search for copper deposits throughout the province. Copper ores have been discovered at Tatamagouche, Margaretsville, Annapolis county, at several points in Antigonish county, and especially at Coxheath, near Sydney. The Eastern Development company have given special attention to the development of the copper mines at Coxheath. Copper ore has also been discovered at Cheticamp, Inverness county, and at French Road, Eagle Head and Gabarus Bay. The increased demand for copper, owing to the fact that it is now more largely employed in the industrial arts, will tend to make these deposits more valuable from year to year.

Regarding the apple production of the Annapolis, Dr. Chipman, at the annual meeting of the Nova-Scotia Fruit Growers' Association in Jan., 1889, said:—"In 1871, the Annapolis valley produced 45,000 barrels of apples of all varieties; sixteen years later, 1886-7, the Annapolis Valley shipped to London 113,983 barrels of standard varieties; 30,000 were shipped to New-York, 30,000 for the Halifax market, 30,000 for the St. John and Intercolonial markets, and probably 50,000 for home consumption and other markets not enumerated,—making a total of 250,000 barrels, an increased production of upwards of 200,000 barrels in sixteen years. And ten years hence these figures will be increased by the fruit from tens of thousands of young trees now growing." Another authority estimates that in ten years time, 5,000,000 barrels of apples will be raised in this valley, where 384,000 acres are available for apple culture.

Mr. C. R. H. Starr, secretary of the Nova-Scotia Fruit Growers' Association, supplies us with the following estimate of the apple production of the province for the past three seasons:

Season	Shipments to England bbls.	to U.S. bbls.	Home Consumption bbls.	Total bbls.
1886–7	114,000	50,000	100,000	264,000
1887-8	57,000	6,000	80,000	143,000
1888-9	105,000*	6,000	110,000	221,000

The figures are within the mark. The crop of 1886 was very large; the last two seasons have been unfavorable. The next good season will likely go far ahead of 1886 as the growth of young orchards has been very extensive.

Within the last year or two a new industry has been started in the gathering of spruce gum for use in the manufacture of the finer kinds of rubber goods. It is shipped to the factories of New England.

Nova Scotia is now traversed by railways from the capital to its eastern and western extremities, and from the capital to the neck of land which connects it with the upper provinces. The new short line now under construction will bring it 250 miles nearer the western Canadian and American cities, thus increasing the future trade of its seaports. Among the other railways under construction or soon to be started are the following: A line in Cape Breton 96 miles long, nearly completed from Port Hawkesbury to North Sydney, traversing the island from its eastern end to the Strait of Canso, where

* To date, April, 1889



it connects by ferry with the railway system of the mainland; the Oxford and New Glasgow Railway, 70 miles long, from Oxford Junction on the Intercolonial to Pictou; the Nova Scotia Central, 70 miles, from Nictaux to Bridgewater, nearly finished; the Springhill and Oxford, 14 miles, and extension of the Springhill and Parrsboro road to Oxford village, finished; the Joggins Railway, county of Cumberland, finished; the Hants Central, about 80 miles, from a point on the Intercolonial to Windsor; the North Eastern from Dartmouth to Westville about 95 miles; Stewiacke Valley & Lansdowne Railway, about 70 miles; a line 20 miles, to connect the Windsor & Annapolis Railway with the Western counties road; the Cornwallis Valley Railway, King's Co., under construction; and the Chignecto Marine Transport Railway, 17 miles, to connect the Bay of Fundy with the Straits of Northumberland. The last named work is designed to convey vessels across the isthmus, and is to be finished by 1890. Large docks, sufficient for vessels of 600 ft. length and 25 feet draught, will be built at each terminus of the road. The locks are so constructed that a vessel can be lifted on cradles, which are adjustable to the sides of the vessel, and these cradles extend over four heavy steel rails. In transporting the craft a large sized vessel will be borne upon about 200 wheels. This will be the first railway of the kind in the world.

In the opening speech of the session of the Legislature in February, 1889, the following references were made to the subject of technical education in the province:

"The efforts to provide agricultural education have been extended by the purchase of a farm in connection with the school of agriculture, and satisfactory arrangements have been made for the management of the property. As a further step in the direction of providing practical education for the industrial classes, temporary arrangements have been made to establish schools of instruction for workmen employed in the coal mines; and these schools are being largely attended by the class of workmen for whom they are designed."

An interesting chapter might be written on Nova Scotians who have become famous in the world outside of their native province. The names of Judge Haliburton (Sam Slick) and of Sir Provo Wallis, the senior admiral of the British fleet, will naturally occur to the reader. It may not be so well known that Nova Scotia had a Whittington who became Lord Mayor of London. In the year 1753, when the English and French were face to face at old Fort Beau Séjour (now Fort Cumberland) in the Chignecto Basin, a herd of cattle strayed



from the British fort, got across the river at low water, and were moving to the French, when a crippled boy was seen to cross the flats and hobble towards the herd. Getting round the cattle he began to drive them back when the French soldiers came out to fire on him. "No," said the gallant French commander, "if a cripple can get the cattle away he deserves to have them," and the cripple boy rescued the cattle. This lad, from being a clerk in a Halifax store, drifted to London and entered a mercantile firm, where, after marrying the daughter of one of its members, he was appointed agent of Nova Scotia in England, and rose to the dignity of Lord Mayor, as Sir Brook Watson.

A number of curious engravings on a series of slate reefs, known as the Fairy rocks, near Fairy Lake, an arm of Lake Keejimkoojik in Queen's Co., have begun to attract the attention of antiquaries. These etchings number about 2000, scattered over a superficial area of 8000 feet, and include sketches of ships, animals, men, birds, fish, hieroglyphs, etc. They are of different ages, and some of the vessels are of such a style as lead to the supposition that the engravings were the work of Norsemen who visited the coast of Nova Scotia 900 or 1000 years ago. Mr. Geo. Creed, of Rawdon, N. S., has reproduced 350 of these etchings, some of which were shown at a meeting of the Nova Scotia Historical Society last year.

Mr. Frank Wiltshire, writing from Kentville to the *Canadian Gazette* on the prospects of Nova Scotia, says:—

"Just eighteen years ago fruit-growing for market was practically unknown; to-day we export 300,000 barrels. We have what are admitted to be, take them all in all, the best paying gold-mines in the world. We have splendid coal and iron in inexhaustible quantities, magnificent water-power everywhere throughout the length and breadth of the land, wood everywhere for fuel and fencing purposes, no paupers, the best health record of any land on the face of the globe, good laws well administered, an intelligent and wealthy population, cheap living, light taxes, and last, but not least, first-class railroad and steamboat connection with every part of the world."



SECTION III.

NEW BRUNSWICK.





GES,



(CANADA)

RESOURCES, PROGRESS AND ADVANTAGES,

BY

CHARLES H. LUGRIN, A. B.,

SECRETARY OF THE NEW BRUNSWICK BOARD OF AGRICULTURE.

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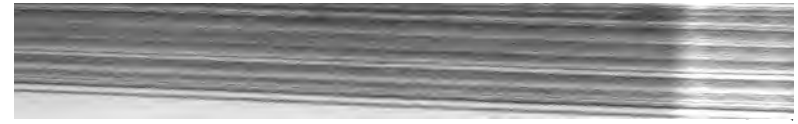
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UNIV. OF MICH.





INTRODUCTION.

ct of this pamphlet is the presentation in con-
n of such facts and statistical information as will
ons, who contemplate settling in New Brunswick,
orrect idea of the present condition and future
of the Province. It is also intended as a handy
erence on all points of general interest respecting
e. No similar compilation of information relat-
w Brunswick has ever been attempted, although
was, to some extent, covered by the late Moses
in his hand-book, published in 1857. In the
pwards of a quarter of a century, which has
ce Mr. Perley's book was issued, so many changes
place in the Province, so many new industries
ed the attention of the people, population and
f settled land have so increased, and the con-
f railways and other causes have contributed so
rds altering the circumstances of residents and
nities open to new settlers, that the whole field
n these pages may be regarded as new. Under
mstances the obligation to accuracy becomes the

The first authentic record of a visit by Europeans to the country, now embraced within the limits of New Brunswick, is that of the voyage of Jacques Cartier, who explored its northern shore in A. D. 1534. He discovered and named the Baie des Chaleurs, and sailed up the estuary of the Miramichi. He found quite large settlements of Indians at several points, and his observations gave him a very favorable impression of the country. We have no account of any exploration of the southern coast of the Province before that made by Champlain in A. D. 1604. He established the first permanent settlement in the Province, on a small island in the mouth of the St. Croix; and he also explored the lower portion of the river St. John. In A. D. 1630 a permanent fort, called after its builder, La Tour, was erected at the mouth of St. John. This was for some time one of the most important points in Acadia, as New Brunswick and Nova Scotia were then called. The French, who were the first European owners of this part of America, established numerous other settlements here, and Acadia was the scene of many stirring events previous to the year 1755, when the French population was expelled. By the treaty of Utrecht in A. D. 1713, France had ceded Acadia to England, but the French population not having submitted to their new rulers, the expatriation of thousands was deemed necessary by the British Government. Many of the exiles wandered back again, others found a refuge in remote districts, and their descendants to-day form no inconsiderable part of the population of the Province.

The first permanent English settlement made in New Brunswick was in A. D. 1761, when a colony of about 800 persons came from Massachusetts and located themselves at Maugerville, on the River St. John. At the close of the American Revolution a large number of loyalists from the United States and disbanded soldiers settled on the St.

John river and at other points in what then formed a county of Nova Scotia, and was called Sunbury. In 1785, Sunbury was erected into a separate Province and called New Brunswick.

The settlement of the Province proceeded with considerable rapidity, as the following will show:—

POPULATION OF THE PROVINCE.

By the Census of	1824,	74,176
" "	1834,	119,457
" "	1840,	156,662
" "	1851,	193,800
" "	1861,	252,047
" "	1871,	285,594
" "	1881,	321,233

New Brunswick continued to be a separate Province until the year 1867, when it united with Nova Scotia and the old provinces of Canada, to form what is known as the Dominion of Canada, which has since been extended until it embraces all the British possessions in North America, except Newfoundland and the West Indies.

Among the countries, containing a sufficient area of unoccupied land to afford a home for a large number of new settlers, few possess as many, and none more, features to recommend them than does New Brunswick. Whether the Province is considered in regard to the fertility of its soil, the healthfulness of its climate, the extent and permanent character of the domestic market for farm produce, its convenient position as respects a foreign market for its products, its adaptability for agriculture, cattle and sheep-raising, or for manufactures, its system of self-government, of education and of laws—in whatever respect it may be regarded, New Brunswick will be found well worthy of

consideration by those who contemplate settling in America.

The proximity of the Province to Europe is not the least of its recommendations. It is nearer England than any other colony having large areas of good farming land available for settlers. The cost of removing from the old home to the new is, therefore, in the case of settlers in New Brunswick, reduced to a minimum; and to those engaged in cattle or sheep-raising for the English market, this proximity is of the utmost importance, as the land carriage of exported live stock is little more than nominal.

New Brunswick is especially adapted for mixed agriculture. A farmer in this Province does not "have all his eggs in one basket"; a total failure of crops is a thing unknown, and if, from exceptional circumstances, a partial failure of one or more crops occurs, there is usually a compensating increase in others.

The cost of land in New Brunswick is comparatively low and the tenure secure. In the rural districts, practically speaking, every man owns the land he lives on. Improved as well as unimproved farms can be obtained at reasonable prices.

The Province affords excellent facilities for the investment of capital on good security at remunerative rates of interest.

In a religious, educational and social point of view, the Province ranks with the foremost countries. The facilities for internal communication are so great and settlements have extended in so many directions, that a settler will enjoy from the day he comes to New Brunswick all the advantages of a progressive and enlightened civilization.

W BRUNSWICK:

RESOURCES, PROGRESS AND ADVANTAGES.



CHAPTER I.

TO INTENDING SETTLERS.

ensuing chapters an attempt will be made to describe vince of New Brunswick as it really is at the present The actual circumstances of the country being nar- ne reader can judge for himself what its advantages advantages are. It may be here premised that the e has a large area of fertile soil unoccupied, but le for immediate settlement; that it is well watered; e climate, though sometimes severe, is healthy; that heap and building material plentiful; that the means rnal and external communication are complete; that nities for the investment of capital are many and hat the soil and climate are well adapted for mixed



system of the highest character; that the government of the country is democratic, but its institutions are those which have stood the test of centuries; that life, liberty and property are safe; that it is a country where sudden storms and floods and malarial diseases are unknown; and if it is not a place where the majority can expect to make great fortunes, it at least affords a comfortable living to all industrious workers. To claim that the Province has no disadvantages would be preposterous; no country in the world is free from them; no adventurer has as yet reached a land where everything is as heart could wish. A settler in New Brunswick must expect to work for his living; and if he takes a new farm he will find that the labor of clearing the forest requires strong arms and plenty of courage. He may lack in the first few years of his life in his new home many comforts to which he has been accustomed; but in this respect he will be much better off in New Brunswick than he would be as a pioneer in the western countries, as in this Province all the advantages of an advanced and long settled community are within a few hours' journey of every section. If he selects good soil, if he is industrious, frugal and temperate, if he devotes himself to his farm, the settler in New Brunswick may, with reasonable certainty, expect to enjoy every necessary comfort after a few years and an independent competency during the decline of life. He can give his children a good education, settle them upon farms or fit them for such pursuits as their inclinations may lead them to select. He can enjoy the fullest rights of citizenship, and to him and his sons every position in the land is open.

The following extract from a letter written by Mr. James Williams, formerly of Marbury, near Nantwich, England, and now of Andover, Victoria County, New Brunswick, was published in the Chester *Chronicle*, and will serve to show how New Brunswick life impressed an English settler.

ıtioning some exceptional circumstances connected harvest of the year (1882), Mr. Williams says:—
uppose, we must have had a bad year; but it is very er than the best we had in England. We are getting ; when dry it is worth three dollars a cord. We glad of an Englishman to help to fell; then we could orses drawing home. A man can earn his money sum- ıter. We are going to sow turnips and potatoes on the If anyone is too far from town to sell wood, the first s or bulbs pays for clearing. We are blest with the best burn; in some parts of the West there is no wood, and fetch from a distance is soft and soon gone. Wood and wo essential things. We have both, and the crop is ready in fourteen or fifteen weeks. We are paid for all we w weeks. Last year we had to buy everything to live fifteen weeks, and also the seed. This year we have l wood to sell, which will be very different. We can or two horses without duty. We are hampered with o disgusting agents to find fault. People drive wagons or single horses—sleds the same. Poor people from ho came here 40 years ago, they and their sons have turn-outs. Crockery is very dear. Common white one dollar a dozen. Dinner napkins are in general use. rst settlers here think English people live better than They consider themselves careful, and will use all the ı six cows in their own family, but, we think, if they ngland they would be in the workhouse. The young ır rings and ear-rings, their cashmere boots and wool- boots to drive in, buffalo rugs to sit upon and cover ıe sleds, which are very comfortable; and you will hear to my mother what a happy Christmas we spent. No ıg drinks are used here, but everything that is good to

family have been well cared for, and our minister has proposed sending him to pass his examination for a teacher, as he has been well educated.

"There are excellent cheese made in this neighborhood. I intend making some this season with the rennets you gave me; the cheese sell well here. If you know anybody who wishes to come here we will keep them a little while, and they can soon have a suitable farm. If a man reaches here with £300 he is independent at once. One who came here last spring gave £40 for a log house and barn, a pig and wheat. Then at harvest he had 40 bushels of wheat, 70 of oats, 30 of potatoes, and a lot of turnips and beans. He has now bought another cow of us, and is very comfortable. He had 12 acres of land cleared, and is now clearing 10 more; he will sell his oats and buy a pair of young steers to work his land; so if a man has £40 he can do well, but if he has £300 all the better. A man that can work can do well if he has no money. Laborers and tradesmen are wanted, and are well paid for what they do.

"It is never very cold more than three days at a time. The sun is very bright, and the weather mild. The coldest days we never feel cold in the body, only the hands and feet. We wear mittens and several pairs of warm socks, and we have overboots to admit of them. Then we are very comfortable."

In this letter we have a candid statement of a farmer fresh from English experience. Its frankness will commend it to all readers.

Referring to Mr. Williams' observations respecting persons without means, while it is undoubtedly true that many persons have come to New Brunswick without a shilling, and have by industry and good management acquired a competency, while in every section of the country there are those to be found who have made their way from the smallest beginnings to positions of comparative wealth, yet men with no capital are not recommended to emigrate to New Brunswick, except with a view of finding employment as

farm laborers, for whom there is fair demand. After a time such laborers can easily become land owners. If a settler has a small capital, say £100, left after paying his passage, he need have no fear in commencing life as a farmer in New Brunswick. For men of this class, or for those whose capital does not exceed £5,000, there is probably no better place in the world than New Brunswick, and for persons of larger capital the opportunities for safe and profitable investment are as good as they are elsewhere.

IMPROVED FARMS.

In nearly every part of the Province of New Brunswick, as in nearly every part of North America, improved farms can be bought at prices which to a European farmer seem very low. The speculative mania is strong all over the new world, and although farmers are numerous who cannot be tempted to part with their estates, many land owners will sell their property if they can get what they consider a good price for it. This is the outcome of the condition of society and education in the new world. A man may be a humble farmer on a poor farm, his son may be "the lumber king of Canada"; another farmer's son may fill a cabinet office and receive imperial honors; another may see his sons become the head of great commercial houses, or take a high place in the learned professions. It is a country of change, and one where a man is free to follow the bent of his own inclinations, so long as he respects the rights of his neighbours. Old country ideas as to real estate cannot be expected to prevail in a new one, where there is free trade in land, and therefore a settler with means will experience no great difficulty in procuring an improved farm. These observations apply not to New Brunswick alone, but to every part of America.

A settler in New Brunswick can purchase an improved farm in the older settlements at prices varying from £100,

sheep; a farm which will cut perhaps 200 tons of hay, ample space left for plough land, pasture and wood For from £200 to £1,000 a very good farm may be purcl £1,000 would buy and stock an improved farm, upon an industrious man could make a very handsome Prices depend of course upon location, the character farm buildings, the acreage cleared, the acreage of in or marsh land and various other conditions.

A farmer from Great Britain would probably be satisfied to buy an improved farm than to take a ne but there is no doubt that the same amount of invested in a new farm in a good location would give results than if invested in a farm already under culti

Persons who desire to purchase improved farms i Brunswick, will do well to put themselves in commun with the Surveyor General of New Brunswick, address is Fredericton.

A letter addressed to any member of the New Bru Legislature asking for information as to farms for sal no doubt be promptly replied to.

NEW FARMS.

New farms, that is to say lots of land upon wh forest is yet standing, may be obtained from the cr from the New Brunswick Railway Company, or fr New Brunswick and Nova Scotia Land Comp

Ungranted crown lands can be procured upon application to the Crown Land Office, Fredericton. Letters should be addressed thus:

Hon. SURVEYOR GENERAL,
Fredericton,
New Brunswick,
Canada.

It is not necessary, although it is perhaps desirable, that purchasers of crown lands should apply personally at the Crown Land Office. Negotiations and arrangements can be conducted by correspondence.

Crown Lands may be obtained in either of three ways: By purchase for money; by purchase for labor; or under the Free Grants Acts.

SALES WITHOUT CONDITIONS AS TO SETTLEMENT.

Lands which the applicant desires to purchase for money must by law be put up for sale by the Crown at public auction. The upset price is 80 cents or 3s. 9d. per acre. There is no limit to the quantity which a purchaser may buy. The terms of the sale are cash down.

All applications are made subject to a claim of "present value" for any improvement that may have been made on the lot applied for, to be determined by the Surveyor General in such manner as he may deem advisable, and if surveyed at Government expense, to a claim of three dollars ($3)* for each one hundred acres applied for. If the land applied for be unsurveyed one dollar must accompany each application to purchase, to secure an order of survey to the District Surveyor; and no single application will be received for more than two hundred acres of land. The application must be in the name of *one individual*, no applications being recognized which are made in the name of a company, firm or partnership.

*One dollar is equal to 4s. 1½d. Sterling.

If the land has been surveyed at Government three dollars must be forwarded to the Crown La with the Petition. If *unsurveyed*, one dollar mus when an order of survey will issue.

If the purchaser, at the time of sale, purchases at the upset price, he is allowed fourteen days in pay the purchase money, but if the land be so *advance* upon the upset price, the whole amount c chase money must be immediately paid, or the lan offered for sale. No conditions of settlement or are required under this form of application, and the purchaser has paid for the land bought, the gra is issued to him.

SALES UNDER THE LABOR ACT.

Under this Act the intending settler can appl not exceeding one hundred acres, in any part of th but he must become a *bona fide* settler thereon. land he selects be unsurveyed he must forward to Land Office with his petition, the sum of one do an order of survey will issue to the Land Surveyo district the land may lie. The Surveyor then survey at the expense of the applicant and submi of the same to the Crown Land Office, which, if fa factory, entitles the applicant to an approval in *Gazette*. This gives him possession of the lot. I he selects be already surveyed at the time of his a at the expense of the Government, he is required with his petition the sum of three dollars as the and if the land be vacant his application is gaze usual form. Having secured his "approval," it is for him to *immediately* comply with the conditi Act and the regulations thereunder. Complian the conditions only entitles the applicant to

be found a copy of the Act and the Regulations
r it:—

TO FACILITATE THE SETTLEMENT OF CROWN LANDS.

Passed 16th March, 1868.

cted by the Lieutenant Governor, Legislative Council,
ly, as follows:—

overnor in Council may cause eligible portions of the
vn Lands to be selected for settlement in various parts
ince, and cause public roads to be made to and through
and may have the said lands surveyed and laid off in
l acre lots on both sides of such road.

all lots so surveyed and laid off, and all other lots of
l which have been surveyed and are eligible for settle-
be reserved for actual settlers, and shall not be disposed
ators or for lumbering purposes.

one hundred acres of land so surveyed be located to
or other male persons of the age of eighteen years and
ho do not own any other land in the Province, upon
g terms and conditions, viz:—

ent of twenty dollars cash in advance, to aid in the con-
roads and bridges in the vicinity of his location, or upon
ing labor on such roads and bridges to the extent of ten
year for three years, as may be directed by the Gov-
uncil or Officer appointed to superintend the same;

commence improving his location immediately after
ermission to occupy the same, and shall within two
after satisfy the Governor in Council that he has built
reon of not less dimensions than sixteen by twenty feet,
ing thereon, and that he has cleared at least two acres
l;

continue to reside upon said land for three consecutive
e expiration of which time, provided he shall have

hundred acres so located as aforesaid; provided always, that should the means of such person so locating as aforesaid be limited, he may from time to time, and for reasonable periods, absent himself from said land in order to procure the means of support for himself and family, without forfeiting his claim to constant residence.

4. Such person so located may, after having built a house as aforesaid, and cleared and cultivated two acres of the said land, and paid the twenty dollars advance, or performed labor on the roads and bridges to the extent of ten dollars or upwards, cut and haul lumber and timber from and off the said lot; but he shall not sell or otherwise dispose of the standing timber until he has obtained a grant of said lot.

5. Every actual settler who is indebted to the Crown on account of the lot occupied by him, provided such lot do not contain more than one hundred acres, and if he owns no other land, and has resided on such lot for three years next preceding, and has cleared and cultivated ten acres thereof, and has paid twenty dollars in cash, or performed thirty dollars' worth of labor on the roads as hereinbefore provided, shall be entitled to a grant of such lot.

* * * * * * *

7. The person to whom the land is located may bring an action for any trespass committed on the land so located while he is entitled to possession under the provisions of this Act; but nothing in this Act shall interfere with the right of the Crown to seize any lumber cut in violation of the provisions of this Act or any Regulations framed thereunder, or cut by any person other than the person to whom the same is located.

REGULATIONS CARRYING OUT PROVISIONS OF THE FOREGOING ACT.

1st. All applications for Crown Land must be made in the name of and by the real applicant, or by his Attorney duly authorized, and the Grant shall be issued only to him, unless his claim be transferred with the approval of the Lieutenant Governor in Council.

2nd. (Form of Application.)

, to the value in all of not less than (40) forty dollars.
› Labor Act Commissioner is to assign work in payment
until he knows that the applicant has improved to the
.t least $40; (as required by Regulation 3), and a report
nade before 31st October of the same year in which the
›ne, otherwise it will not be credited.

e shall within two years after publication of his approval
to the Surveyor General a Certificate attested to by
n oath before a Magistrate, and certified by two of his
, that he has built a house fit for occupancy upon the lot,
s dimensions than sixteen by twenty feet, and is then
herein, and that he has cleared and had cultivated in the
rear at least four acres of the said lot.

ıe absence named in the above Act shall not in any one
ed five months, viz:—in Summer, during the months of
August; and in Winter, during the months of January,
and March.

efore he shall be permitted to cut any timber or lumber
hat cut in clearing the land for cultivation) he shall
to the Surveyor General a Certificate as prescribed in
, and also a Certificate from the Commissioner that he
med the necessary amount of labor.

ll persons who have purchased Crown Lands not exceed-
acres, under previous Regulations, and have paid the
f $20, or have performed work to the value of $30 on
l are actually then residing on and improving the lot so
, and have so resided and improved the same for the
consecutive years, shall be entitled to a Grant upon



9th. No person shall be authorized under the previously r
Act to commence an action for trespass upon his lot, unl
shall have previously presented to the Surveyor General a (
cate on oath that he has performed all the conditions requi
the Act of Assembly, and the present Regulations, neces
entitle him to present possession of the lot located to him.

FREE GRANTS.

Free grants of crown lands are issued to *bona fide* s
under the provisions of the following statute:

AN ACT RELATING TO FREE GRANTS OF CROWN LANDS.

Be it enacted by the Lieutenant Governor, Legislative C
and Assembly, as follows:—

1. The Governor in Council is hereby authorized and emp
to select and set apart certain tracts of the Crown Lands
Province suitable for settlement and cultivation, and cause
roads to be made to and through the same when selected.

2. Such tracts shall be surveyed and laid off into lots
hundred acres each, having a front on such roads; and t
lands so selected, surveyed, and laid off, shall be reserved fo
settlers.

3. Whenever any association of ten persons or a less
than ten, in the discretion of the Governor in Council, sha
application to the Governor in Council, declaring their in
of becoming actual settlers under the provisions of this Act
tract set apart under Section one of this Act, and in w
allotments are made at the time of such application, each s
or applicant shall have a lot allotted to him in such tra
after the first allotment in any tract under this Section,
Act heretofore in force, the provisions hereof shall extend
person subsequently applying for a lot in said tracts.

4. Free grants of such lots may be made to such pe
may become actual settlers under this Act and the Reg
from time to time made under the authority hereof.

e person to whom any land may be assigned or allotted
his Act (hereinafter called the allottee) for a free grant
shall be considered as located for said land within the
of this Act, so soon as the approval of his application
shall be published in the *Royal Gazette*.

person shall be allotted or assigned any land under this
ny Regulations thereunder, unless such persons shall be
e of eighteen years or upwards; nor shall any person be
any greater quantity than one hundred acres.

fore any person shall be allotted or assigned any land
e provisions of this Act, such person shall make affidavit,
posited in the Crown Land Office, that he has no real
hat he has not been assigned or allotted any land under
isions of this Act, or under chapter fourteen of The Con-
l Statutes, that he is of the age of eighteen years or
, and that such land is desired for his own benefit and for
ose of actual settlement and cultivation, and not directly
ctly for the use and benefit of any other person or persons
ver, and not for the purpose of obtaining or disposing of any
ees growing thereon before he obtains permission thereof.

grant shall issue for any land allotted or assigned under
, or any Regulation made hereunder, until the applicant
claiming under him, shall have performed each of the
g settlement duties or conditions, viz:—The allottee shall—
—Commence chopping, clearing and improving on the lot
to him within one month after publication of his approval,
l within three months after the publication of such approval
as aforesaid on his lot to the value of twenty dollars.

dly—Within one year from such publication build a house
fit for habitation, of not less dimensions than sixteen feet
ty, and reside therein, and shall chop down and cultivate
than two acres by sowing or planting the same.

3rd—Chop down, cultivate and clear not less than ten acres



such land be cultivated as aforesaid.

Fifthly—Compliance with the first, second and third c above mentioned within a less period than three years, a residence up to the time of such compliance, shall ent Allottee to a grant. On failure in the performance of a Settlement conditions and duties in this section menti allotment shall be forfeited, and all right of the Allott one claiming under him in the land shall cease.

9. No claim for improvements by an Allottee whose feited shall be allowed, except for buildings, the reasons of which shall for two years be a charge upon the lot, an paid for by any other person applying therefor within before such lot shall be allotted to such applicant.

10. All trees growing or being upon any lot so as allotted as aforesaid, shall be considered as reserved fron allotment, and shall be the property of Her Majesty, ex the Allottee, or those claiming under him, may cut and trees as may be necessary for the purposes of building, f fuel, on the land so allotted, and may also cut and disp trees actually required to be removed in *bona fide* cle land for cultivation; and no trees (except for necessary fencing, and fuel, as aforesaid) shall be cut beyond th such actual clearing before the issuing of the grant, unl for cutting the same be obtained; and such license may b by the Allottee after compliance with Settlement condit bers one and two, upon such terms and to such extent prescribed and authorized by the Governor in Council trees cut (except as aforesaid) without such license may and forfeited in like manner as trees cut without lic

on made hereunder.

f the Allottee die intestate before the issue of the grant, ight and interest to such lands shall vest in his widow, if one him surviving, but if not, then in his heirs.

Neither the Allottee, nor any one claiming under him, shall wer to alienate (otherwise than by devise) or to mortgage ge any land allotted as aforesaid, or any right or interest before the issue of the grant; and no land allotted as d, nor any interest therein, shall in any event, before the the grant thereof, be or become liable to be attached, r taken for payment or the satisfaction of any debt or contracted by the Allottee, his widow, heirs, or devisees.

Nothing in this Act contained shall be construed to exempt rest of any Allottee in any such land from levy or sale for d taxes now or hereafter legally imposed upon the Allottee or any person claiming the same under him.

Any person who may have heretofore become an Allottee ny Law relating to the "Free Grants of Crown Land," y become entitled to the several payments of fifteen dol- der sections fourteen and sixteen of chapter fifteen of solidated Statutes hereby repealed, shall, nothwithstand- repeal, be entitled to receive the said sums respectively liance with the conditions which would have entitled them said money under the said sections of the said hereby chapter.

A sum equivalent to the moneys which, under the four- nd sixteenth sections of the said hereby repealed chapter, have been paid to any Allottee, shall be expended in the



CHAPTER II.

FARMING IN NEW BRUNSWICK.

Although the farmers in some parts of New Brunswick give prominence to certain lines of produce, as a class they may be said to practice mixed husbandry; adaptability for this is one of the greatest recommendations which can be given any country. A successful English farmer, residing in Carleton County, writes:—"In this country we do not 'have all our eggs in one basket'. I never knew any crop to be a complete failure, but of course there are years when some crops are not as good as others; the fact, however, that we all practice mixed husbandry makes one year on an average quite as good as another, and renders such a thing as a total failure of the summer's operations practically unknown."

The Province is especially adapted to sheep and cattle-raising, but it produces the best of wheat in large quantities; oats are an exceptionally good crop; rye, barley and buckwheat yield luxuriantly; indian corn is a safe and profitable crop, yielding a profit of £10 per acre; potatoes grow to a large size and are of the best quality, the yield per acre being unsurpassed in America; other roots, such as turnips, beets, mangolds, etc., do equally well; such fruits as apples and plums come to the greatest perfection; cherries yield prolifically, and strawberries, raspberries, blackberries and blueberries grow in enormous quantities.

wing table of yield per acre and weight per Win-
hel, was prepared by Prof. Johnston, F. R. G. S.,
tics gathered from every quarter of the Province:

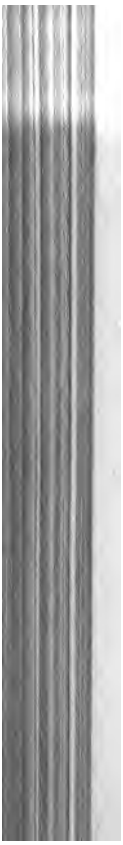
	Per Acre.		Weight.	
.....	20	bushels, ...	$60\frac{11}{13}$	lbs.
.....	29	"	50	"
.....	34	"	38	"
.....	$33\frac{3}{4}$	"	$48\frac{8}{11}$	"
.....	$20\frac{1}{2}$	"	$52\frac{1}{2}$	"
.....	$41\frac{3}{4}$	"	$59\frac{1}{2}$	"
.....	$226\frac{1}{2}$	"	63	"
.....	456	"	66	"

l, "These average weights over a whole province
land is new and manured only in some instances
intervals, indicate a capacity in soil and climate
grain for human food of a very superior quality."
er read before the British Association at Montreal
Professor J. T. Sheldon, of the College of Agri-
lisbury, England, the following occurs :—

stern and Maritime Provinces of Canada are in the
ges of agricultural transition, and will in time develop
ising and dairying countries, though the process may
peration. But there can hardly be a doubt that the
a wise one ; first, because they are better adapted to
ts than to grain raising.

npetent for me to record, as a result of personal investi-
pinion that the Eastern and Maritime Provinces, in
of them, are well adapted in soil and climate to the
oots and green crops, as well as of hay and straw for
ese crops supply the foundation for successful stock-
dairying, and by stock-raising I do not mean cattle
l sorts of animals which go to the efficient equipment
ms.

Maritime Provinces particularly a change in the habits



shall we find better stock land than in the noble valley o
John River, in the Sackville marshes, in the vale of Anna
the Eastern Townships of Quebec, and in many other l
while, as for sheep husbandry, where have we a soil so su
the dry and friable loam of Prince Edward Island?"

In respect to the adaptability of the Province fo
raising, we have the testimony from a disinterested
namely, Prof. Brown, of the Ontario Agricultural
Prof. Brown has had an extensive experience in sh
ing in Scotland. He gives the following estimat
expense and profit of a sheep run. His estimates
report upon the adaptability of New Brunswick
industry have attracted much attention in the Pro
Ontario, and he thinks may lead to investments bei
in the business in New Brunswick by some of his spe
neighbours. He says:—

"British Columbia excepted, you hold now the only exte
naturally suitable lands in the Dominion for the cheap p
of wool and mutton. At a rough under estimate, the
New Brunswick and Nova Scotia some 2,000,000 acres
runs, outside of all arable, bush, rock, water, meadow and
cattle grazing land of the valleys. These should carry su
ber as to produce annually, not maintain, but to sell off e
40,000,000 pounds of mutton and 2,000,000 pounds of
annual gross revenue of, say, $2,300,000. This is no w
lative calculation, but one based upon my own handli
same subject in Scotland and Ontario and upon the exp

uld be the independent and, provincially, the most pro-
e and wealthy plan.

t it is not the one for immediate speculation and greatest

If sufficient blocks of land of the right stamp can be had
or purchase at reasonable figures, I am satisfied the migra-
stem would be best. From Scotch experience of a similar
er, as well as knowledge of what can be done with sheep in
), and making allowance for all possible contingencies, a
of $12,000, properly handled, would make the following
history :—

SHEEP GRAZING IN NEW BRUNSWICK AND NOVA SCOTIA.

(Area required, 6,000 acres.)

2,000 shearlings in Ontario, averaging 100 lbs., 1st May, 5,		$10,000
of purchasing and concentrating,		500
, 15 cars, Toronto to Moncton,		1,200
rail,		100
Capital required,		$11,800
pherds, six months,		400
ce shearing,		150
to seaboard, 1st November,		300
, 50 cents per head,		1,000
on capital,		500
als,		200
Total debit,		$14,350
2,000 head, 15th May, medium wool, 7½ lbs., at nts,	$ 2,250	
f 1,940 (60 deaths) at seaboard, averaging 140		

"Double the rent, if you choose, and allow for greater loss than I have done, and there would still remain a large margin of profit—so large as to throw doubts on the whole character of the estimate."

Prof. Sheldon says:—"Sheep in particular do remarkably well wherever I have seen them in Canada and no where better than in New Brunswick."

Mr. C. S. Lugrin, when Secretary for Agriculture, caused a series of inquiries to be made among the farmers in all parts of the Province in reference to sheep-farming, and he was able to report that it was found, when conducted simply as one of the branches of a general farming business, to pay a profit of at least 30 per cent. per annum. Mr. J. D. M. Keator, one of the best known farmers of New Brunswick, in writing lately to the St. John *Telegraph*, said that "sheep-raising is beyond a question the most profitable business in which the members of my calling can engage." This fact is well understood, and thousands of sheep are annually raised for the United States market, especially by the farmers in the St. John Valley. Something has been done in the way of shipping mutton to England, and it has been demonstrated that the business can be profitably conducted; but the demands of the American market are sufficient to take all the surplus sheep which New Brunswick will have to sell for many years to come.

The quality of New Brunswick mutton being superior to any other which finds its way into the market of the cities in the Eastern States, the farmers who have sheep to sell experience to the full extent the advantages of their situation alongside of a great trunk line of railway which gives direct and speedy connection with those cities. To most persons a sheep run is associated with remoteness from cities and the centres of population; but in New Brunswick the best ranges for sheep are within two days' journey from one of the best markets for mutton on the Continent.

ge business is already done in raising sheep and
or export to Great Britain and the United States—
ments to the former country being principally from
rland and Albert Counties. This industry is capable
expansion, the proximity of the farming districts of
unswick to seaports more than compensating for any
ges which western farmers may possess. Another
ge for the prosecution of this business, which New
ick possesses, is that less capital is required to carry
this province than in places more remote from the
orts. A small venture could not possibly pay where
and carriage is necessary, but is relatively as profit-
larger one, when carried on near a port of shipment.
New Brunswick may never become a wheat ex-
country, or even raise enough of this grain to
he domestic demand, the farmers are yearly giving
attention to its cultivation; the increase produc-
head of the population in twenty years being 66
. As is shown by tables already given, the quality
Brunswick wheat and the yield per acre is very
The majority of the farmers raise wheat enough for
n use.

Brunswick potatoes rank with the best grades in the
States markets, being quoted higher than any potatoes
hose raised in the valley of Aroostook, a tributary
St. John, which have a fancy value a shade above
runswick potatoes. At the last state fair held in



potatoes, and although nothing has yet been attempted in this line in New Brunswick, it no doubt offers an excellent chance for investment.

The exports of indian corn are already large and are annually increasing. The corn is put up in hermetically sealed cans, in which condition it is exceedingly palatable. New Brunswick brands of canned corn are preferred to any other.

The attention paid to fruit growing is annually increasing and it is found to be very profitable. Several excellent varieties of apples are produced in perfection, one of them, known as the New Brunswick, is unsurpassed as an early apple. The United States absorb all the surplus stock of apples, although several shipments have been made to England. Skilful orchardists, with a little capital, can invest it most profitably in New Brunswick in raising apples and plums.

Native strawberries are delicious and plentiful, but are not an article of export. Immense quantities of cultivated strawberries are grown; but owing to the great demand for them at home and abroad the supply is always short. The same observations apply to raspberries, except that the native variety is exported as well as the cultivated varieties. Blueberries are a most prolific wild berry of agreeable taste; they are used in large quantities and are canned for export. In the cultivation of berries, fruit, flowers and early vegetables, there are always excellent openings for skilful men, with a little means. It is only of recent years that much attention has been paid to this line of agriculture, and the demand is yet greater than the supply; this is due to the excellent facilities for export, and to the practice of canning goods.

The New Brunswick farmer, it will thus be seen, is not compelled to devote his energies in any one direction, but has before him as wide a field as is open to his brothers in

any country. Slowly the supremacy of agriculture has asserted itself in the Province, until at last the other industries, which temporarily promised better results, have taken their true place, and the cultivation of the soil and its kindred pursuits are recognized as the chief and best employment of the people. The lesson which the history of New Brunswick agriculture teaches is that an industrious man upon a moderately good farm can raise his family in comfort and even in modest luxury; can secure himself a competency for his declining years, and leave his children a valuable property. Many have done this, whose sole capital when they began to clear the forest was a pair of stout arms and a courageous heart.

CHAPTER III.

THE CLIMATE.

The climate of New Brunswick is favorable to the successful prosecution of Agriculture and the longevity of the inhabitants. It has been the custom to represent the climate of Canada as made up of extremes, but it must always be borne in mind that Canada is a country almost as large as Europe and extending through nearly as many degrees of latitude; that it is subject to many influences affecting the climate, of which it presents every variety from the balmy, rainless summers and mild wet winters of Southern British Columbia, to the almost unbroken winter of the Arctic zone. New Brunswick goes to neither extreme, for, although there may be exceptional days every year when the thermometer registers above 90° Fahrenheit or below—20°, a man can do more days' work out of doors in the course of the year in the Province than he can in any part of the British Isles. During the coldest days children go to school and men engage in their ordinary out-door employment without inconvenience. A common working dress for out of door wear in the coldest weather consists of a suit of heavy knit underwear, a flannel shirt, trousers of homespun wool cloth, one or two pairs of woollen socks, a pair of boots, larrigans, or moccasins, a coat or "jumper" of the same material as the trousers, a cloth cap, with coverings for the ears, and a pair of woollen mittens. Clad thus a man can work out of doors all day long in the coldest winter weather ever felt in New Brunswick. If he is going on a long drive he will put on a heav

top coat. Everybody who lives on a farm in New Brunswick is well provided with comfortable clothing, and the cold of winter, so far from being a drawback or an inconvenience, is both an advantage in many respects and a source of much enjoyment. New settlers in the country are invariably agreeably disappointed in the winter weather. The New Denmark settlers say that, on the whole, it is preferable to that of Denmark, and the Kincardine and other settlers from Great Britian say that owing to the cheapness of excellent fuel, the dryness of the air, and the infrequency of serious storms, a New Brunswick winter is pleasanter than one in Great Britain.

Summer in New Brunswick is usually very fine. In every season there are a few very hot days, but the greater part of the summer is as delightful as the weather in any part of the world. The province is a favorite resort of thousands of persons from the Atlantic States, who seek a more enjoyable climate than they can find at home.

The course of the seasons is somewhat as follows:—

The year generally begins with the rivers and lakes frozen over firmly, and a foot of snow upon the ground; at least this would be an ideal beginning for the year. The Christmas marketing will have made hard snow roads all over the country, on which a pair of horses will transport immense loads of produce. The farmers are occupied with their stock; marketing what they have to sell or cutting and hauling firewood and fencing; in some cases they will be engaged with their horses in hauling logs for large lumber operators, and sometimes they will carry on a small logging operation on their own account. Lumbering operations are at this season of the year under full way, and in remote sections, sometimes far beyond the settlements, hundreds of men are employed either in cutting logs or in hauling them with horses to the banks of the streams.

The pleasure of travelling over snow roads is very g
Given a good road, the mercury near the cypher, no
bright moonlight, a pair of fast trotting horses and a
well equipped with furs, and you have the perfecti
locomotion. Sleigh-driving as an amusement is l
indulged in during the cold weather.

Throughout January several heavy snow falls n
looked for. Six inches of snow at one fall would l
sidered heavy, although sometimes, but rarely, ten in
a foot will fall during a storm. The snow is light a
and roads are easily made through it. Farmers like
heavy snow storm because it is regarded as a good
tion to the grass roots, and in melting leaves a resid
value as a fertilizer. Usually during each winter t
two or three days' storms, but as a general
snow storm is of not more than a day's durat
January a few mild days with rain may be looked

February is a continuation of January in respec
weather, but its average degree of cold is usually
than that of any other month of the year.

March is sometimes stormy, but its average tem
is higher than that of the two preceding months. A
middle of the month mild weather, with rain, is
and towards the close the snow begins to disapp
much-used roads and in sunny places.

Early in April all the snow melts except in the
the forests; the cutting and hauling of lumber is st
and preparations are made for "stream-driving."
the middle of the month the ice in the rivers begins
up and run out, so that when May comes in navi
open. The ice in the lakes breaks up somewh

appears simply wonderful to a person not familiar
ıe New Brunswick climate. The deciduous trees put
heir leaves, the grass becomes green and flowers
up almost before one has noticed that the snow has
A warm rain and a few days of bright sunshine
ely transform the face of the country. Planting
in May. In this month also the lumbermen begin
ve" their logs out of the streams.
ıne planting is continued and so rapidly do things
in the sunny summers of New Brunnswick that
ıay be put in late in this month and yet have an
ıt chance of coming to perfection.
ıly haying begins and, in favourable seasons, is con-
during the first fortnight in August. In July wild
erries come to perfection and are found in abundance;
s the close of the month wild raspberries are ripe,
ly garden vegetables are fit for use.
ards the last of August the harvesting of early grain
and early apples are ready for marketing.
harvest continues during September, which is gener-
e finest month in the year. By the last of this month
crop, except that of roots will be gathered.
October the root crop will be harvested, and in the
n days of the month preparation will be made for
The grass will begin to fail in the pastures, and
hts will become colder with occasional frosts.
y in November a fall of snow may be looked for, to
owed by a few days of most genial weather, known
lian summer." Rain and snow storms are common
vember, but the snow does not remain upon the
. About the middle of this month the rivers freeze

in the fields. In this month men and teams go to the woods to engage in lumbering.

December is the beginning of winter. The ice in the rivers and lakes becomes fixed; the snow remains on the ground; the fire-place or the stove is kept replenished with fuel all day, and by Christmas winter has fairly set in.

The effect of the winter upon agriculture is on the whole not disadvantageous. The heavy frosts render the ground friable and open, doing more good than could be accomplished by several ploughings. To the pulverizing action of the frost upon the soil is attributed the remarkable yield of root crops in New Brunswick. From the opinions expressed to the writer by one hundred and fifty practical farmers, this deduction may fairly be drawn: That an ordinary New Brunswick winter, so far from being injurious to the soil or the grass, is a positive benefit; but if there is less than the usual quantity of snow, or in localities where the natural drainage is poor and no artificial means are used to carry off the surplus water, hard frosts have an injurious effect upon the grass. Upon live stock, cared for properly, the winter has no injurious effect whatever. This is now conceded by all qualified to judge; so much so in fact that the most eminent experts, who have considered the subject, pronounce the Province to be admirably adapted for stock-raising.

FUEL.

In connection with the question of climate, that of fuel may be considered. It is not a question of much moment to the New Brunswick farmer, since he can get the best fuel in the world for the mere labor of cutting and hauling it. Rock maple and yellow birch are unsurpassed as a domestic fuel; the other varieties of wood are all valuable, though in a less degree than these. In addition to the wood supply, New Brunswick has a store of coal, hereinafter described, which is practically inexhaustible.



requently occur in the Western States. Even heavy
re uncommon, except on the exposed parts of the
During every summer local thunder showers are fre-
it the amount of damage done by them is incon-
. If heavy rains occur sudden floods do not result,
treeless regions of the West, but the moisture is
he forests and lakes until it gradually finds its way
vers. Droughts are unknown and heavy freshets
ne farming season are rare.
ficial returns in the British War Office show that
w Brunswick was a military station, the health of
s in garrison here was remarkably good; the Pro-
this respect standing among the first of all the
ilitary stations. Fever and ague and malarial fevers
own. There is an abundance of the best of water
ere; in fact, in all that is necessary to produce rug-
New Brunswick is unsurpassed. In all parts of
nerica the natives of this Province are admitted to
the average in strength and endurance.

CHAPTER IV.

A GENERAL DESCRIPTION OF THE PROVINCE.

New Brunswick is a Province of Canada.

The Dominion of Canada is a part of the British Empire. It is situated in North America, and embraces all of that continent lying north of the 49th degree of north latitude, except Alaska, formerly Russian America, and including the Provinces of New Brunswick, Nova Scotia and Prince Edward Island, which with the principal part of the Province of Ontario and a portion of the Province of Quebec, lie south of that parallel. Canada extends from the Atlantic Ocean on the east to the Pacific Ocean on the west. Its eastern provinces are nearer Europe and its western provinces nearer Asia than any other habitable part of America.

The Dominion is divided into the Provinces of Nova Scotia, New Brunswick, Prince Edward Island and Quebec, which border on the Atlantic; Ontario and Manitoba, which are in the interior, and British Columbia, which is on the Pacific Coast. It comprises also a vast area only partially explored, and known as the Northwest Territories, consisting largely of land excellently adapted for agriculture.

The Capital of Canada is Ottawa.

The area of Canada is 3,471,392 square miles, or nearly equal to that of Europe.

The population of Canada is upwards of 4,500,000.*

*[The population of Canada by the census of 1881 was 4,315,000.]

ailway, nearly completed, extends from the
Pacific Coast of the Dominion.

wick lies between the 64th and 69th degrees of
(from Greenwich) and between the 45th and
of north latitude; that is to say the latitude
e is the same as that of Central France, Fred-
apital, and nearly the geographical centre of
being in the same latitude as the city of Lyons,
whole Province lies in a more southerly lati-
part of the British Isles.

ew Brunswick is an irregular quadrilateral.
length from north to south and its greatest
st to west are each about 200 miles.

square miles is 27,322; in acres, 17,394,410, or
e as that of Scotland.

ion of the Province was 321,233 by the census

NTS IN ACRES OF THE SEVERAL COUNTIES IN THE PROVINCE.

	Area.	
.....	2,072,710	acres
.....	1,195,000	"
nd,.....	2,756,000	"
.....	1,149,000	"
.....	887,300	"
.....	435,000	"
.....	386,400	"
.....	822,500	"
.....	877,200	"
.....	924,700	"
.....	656,000	"
.....	2,278,000	"
.....	788,200	"
.....	1,324,200	"
.....	810,500	"
Total,.....	17,393,410	



New Brunswick from Nova Scotia, the two Provinces united by the narrow Isthmus of Chignecto. The navigation of the Bay of Fundy is esteemed safe at all seasons of the year. On the east of the Province are the Gulf of St. Lawrence and Northumberland Straits; the width of the latter varying from ten to thirty miles. The Strait of Northumberland separates New Brunswick from Prince Edward Island. On the north of the Province is the Bay of Chaleur (Baie des Chaleurs) with an average width of twenty miles, separating New Brunswick from the peninsula of Gaspe, Quebec. The waters on the west and north are not navigable during the winter season, or on an average from December to April, because of the ice; but communication is maintained, more or less regularly, with Prince Edward Island at all seasons of the year.

The coast of New Brunswick is indented with many excellent harbors, some of them being of great capacity. Among those on the Bay of Fundy Coast are St. John, St. Stephen, St. Andrews, St. George, Lepreaux, St. John, Musquash, and the estuary of the Petitcodiac. On the coast called the North Shore are Baie Verte, Shediac, Buctouche, Richibucto, Miramichi, Shippigan, Caraquet, Bathurst, Dalhousie and others. Besides those named there are numerous minor ports, and the principal rivers are navigable for ocean-going vessels for a considerable distance from the sea.

The coast of New Brunswick is supplied with an excellent system of lights and fog alarms and shipwrecks are

for navigation at all seasons of the year. The harbor of St. John has never been known to freeze over, and the other bay harbors are rarely, if ever, obstructed by ice. These New Brunswick ports are the only harbors in America, north of Cape Hatteras in North Carolina, of which this can be said, and the fact is regarded as likely to be important in determining the Atlantic terminus of the Canadian trans-continental railway system, which is now on the eve of completion, and will unite the harbors on the Pacific with those on the Atlantic Coast of America, thereby affording a route from Great Britain to Eastern Asia more than one thousand miles shorter than any other. It is confidently hoped that a large portion of the trans-continental trade will be done by New Brunswick ports, in which event the commercial importance of the Province will be very greatly enhanced.

Among the harbors of New Brunswick, which have been looked upon as likely to become very important termini of ocean and continental traffic are those of Shippegan, in Gloucester County, Chatham and Newcastle in Northumberland County, St. John and St. Andrews.

Lying off the Coast of New Brunswick are numerous islands, which are included in the Province. Of these the principal are Grand Manan, Campobello and the West Indies in the Bay of Fundy; and Shippegan and Miscou, which separate the Bay Chaleur from the Gulf of St. Lawrence.

CHAPTER V.

THE SURFACE OF THE COUNTRY.

The surface of New Brunswick is undulating. There are no extensive level plains, and no high mountain ranges. Along the river valleys are low, flat areas, of alluvial deposit, known as intervals, and from these the country rises to what would be a low table land, if it were not intersected in all directions by the courses of streams, which give a succession of gently rising hills and broad valleys. A few isolated mountain peaks break the otherwise smooth outline of the landscape, but they are never of great altitude. The highest known elevation in New Brunswick is Bald Mountain, treeless, on the shore of Nictau lake, in the central part of the Province. Its summit is less than three thousand feet above the sea level. Immediately to the south of Bald Mountain is a rough and broken area, by estimation forty miles square, containing a large number of elevations generally conical in shape and none known to exceed 3,000 feet in height; but outside of this there is no large consecutive area in the Province not adapted for settlement. Tracts of rough and broken land, on which the soil is thin, are met with in other parts, but they are of comparatively small extent. The proportion which the waste land, that is land not suited for agriculture, bears to the whole area of the Province is not more than one quarter, or in other words the area of arable land may be estimated at 13,000,000 acres

The remainder is not to be considered as valueless, as much of it is covered by forests of commercial value, and a large part of it has been pronounced by competent authority to be well suited for sheep-raising. There is, practically speaking, no barren, or absolutely waste land in New Brunswick.

In 1849, Prof. J. F. W. Johnston, F. R. S., made a report upon the agricultural capabilities of the Province. He estimated the area, including the best upland, capable of producing two tons of hay or forty bushels of oats to the acre at 1,000,000 acres. At this time a large section of the Province had not been explored, and Prof. Johnston qualified his estimate by saying that a fertile belt of first-class upland might be found to extend across the northern portion of the Province. It is now known that such a belt does exist, althought its exact area is not ascertainable, in the absence of accurate surveys; but enough is known of it, and sufficiently large areas of first-class land, unknown thirty years ago, are to be found in other parts of the Province to warrant an estimate of 3,000,000 acres as the extent of land of this quality in New Brunswick.* Of this area less than one-half has been taken up by settlers, and the remainder is now open, and will be made available for settlement by the construction of roads through it, as rapidly as the demand justifies.

Of second-class upland, that is of land capable of producing one and a half tons of hay or thirty bushels of oats to the acre, Prof. Johnston estimated that there was an area of 7,000,000 acres; and this is probably quite accu-

*This is my own estimate made from data of my own collecting. I have found that it agrees with the estimate made by Prof. Hind, F. R. G. S., in 1865. He says in his report to the Government of New Brunswick: "The area of first-rate upland soil within the limits of the Province was estimated by Prof. Johnston to be about one million acres; it is satisfactory to know that further experience suggests the idea that this estimate is too low, and that in the almost inaccessible river valleys, respecting which Prof. Johnston could obtain no information, sixteen years since, without undertaking a journey through an unbroken wilderness, there is an available area of upland soil which will increase his estimate at least one-half, and an area of interval and valley land which may be reasonably assumed not less than 3,000,000 acres, instead of 1,050,000, as estimated by Prof. Johnston."

rate enough for practical purposes. The greater part of this area is unoccupied by actual settlers.

The remaining 3,000,000 acres of arable land is either light sandy, gravelly or stony soil. It is fairly productive, but in many cases hard to work, and in others is what is known as hungry land. Much of the soil of this class is near the sea coast, the towns and the main highways, so that a large portion of it is already settled upon, and in many cases is farmed profitably.

Of the 4,000,000 acres of land in the Province, not included in the estimate of arable land, embracing bogs, heaths, barrens and caribou plains, Prof. Johnston says they are "not to be considered as absolutely irreclaimable, but to be unfit for present culture or for settlement, until much larger progress has been made in the general improvement of the Province." Prof. Hind thinks that while many may be induced to concur in this view, "it must be borne in mind that the experience obtained in Lower Canada shows that by drainage and a year's tillage, many of the bogs, heaths and barrens can be made most productive pasture lands."

The best land in New Brunswick is in the interior, and this will account for the fact that so large an area of that best adapted for settlement is still unoccupied. It has until recently been inaccessible except at some few points, and at all of these the land has been taken up and very prosperous communities are established.

Two distinguishing features of New Brunswick are the salt marshes at the head of the Bay of Fundy and the interval or alluvial deposits in the river valleys. The former are referred to at length in another chapter.

THE INTERVALS

Upon all the rivers of New Brunswick are large, low-lying tracts formed of sedimentary deposits. They consist of a

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layer of fertile loam, light, easily worked and free from stone, resting upon sand or clay. Some of these intervals are overflowed by the rivers at the spring freshets, others are above the highest point which the water ever reaches. Similar in formation to the intervals are the numerous islands which are found in all the rivers. These intervals are in some cases so extensive that they contain many large farms; in most cases, however, they are less than a mile wide, measuring back from the river bank. In these instances, farms will begin at the river bank, sometimes with a low interval, which is overflowed every year, following this will be a higher interval, and back of this the gentle slope of the highland. These alluvial tracts are not confined to the main rivers, but are found even upon the smallest tributaries, and they are almost invariably of the same fertility and general excellence.

Dr. Bailey, of the New Brunswick University, writing in 1864, in his report to the Government of the Province, speaking of the intervals yet in a wilderness condition, said:

"These interval lands, while they forbade any attempt at geological exploration, could scarcely fail to attract attention for their evident fertility, and for the very remarkable luxuriance of their vegetation, elms and mountain ash attaining an enormous growth, arbor vitæ, spruce, fir, birch and poplar being very numerous, while the shrubs, herbs and ferns, some of the latter attaining a height of four or five feet, were generally of a kind to indicate great fertility of the soil supporting them."

CHAPTER VI.

THE CHARACTER OF THE SOIL.

AGRICULTURAL STATISTICS.

Prof. Johnston, from a careful comparison of statistics gathered from all parts of the Province, estimated that the river islands and intervals and the marsh lands were capable of producing an average of 2½ tons of hay or 50 bushels of oats to the acre; that the best quality of upland would produce on an average 2 tons of hay or 40 bushels of oats to the acre; the second quality of upland 1½ tons of hay or 30 bushels of oats to the acre; and the inferior land 1 ton of hay or 20 bushels of oats to the acre. He gave the following comparison of the productiveness of New Brunswick and the States of New York and Ohio, his estimate of the production of New Brunswick being made from a comparison of sixty-two independent returns, embracing within the scope of their application every part of the Province. The New York and Ohio estimates were those published by the State Agricultural societies.

AVERAGE PRODUCE PER IMPERIAL ACRE.

	State of New York.	State of Ohio.	New Brunswick.
Wheat,.....	14 bushels.	15¼ bushels.	20 bushels.
Barley,.....	16 "	27 "	29 "
Oats,.....	26 "	33¾ "	34 "
Rye,.....	9½ "	16½ "	20½ "

	State of New York.	State of Ohio.	New Brunswick.
Buckwheat,.....	14 bushels.	20¼ bushels.	33¾ bushels.
Indian Corn,.....	25 "	41¾ "	41¾ "
Potatoes,.....	90 "	69 "	226 "
Turnips,.....	88 "	— "	460 "
Hay,.....	—	1¾ tons.	1¾ tons.

These returns show that the productiveness of New Brunswick per acre is greater than that of either of these States, notwithstanding the fact that the methods of agriculture pursued in both New York and Ohio are superior to those followed in New Brunswick.

Such statistics, although so favorable to New Brunswick, do not give a correct conception of what can be done by farming the best soils in the Province after the most improved methods of cultivation, and in considering the results which such returns, as are available, of the yield of the farms give, it ought to be borne in mind that in the great majority of instances the standard of agriculture is far below what it is in England. The methods of cultivation which the majority of New Brunswick farmers adopt would be ruinous in Great Britain. Among the returns from which the above summary of the yield per acre in the Province is taken, the yield of wheat in many localities is placed at 30, 35 and even 40 bushels per acre, and the weight per bushel in one case as high as 70 lbs. to the bushel; the average weight stated in the returns is 63 lbs. to the bushel. The yield of barley is in several instances put as high as 40 bushels to the acre, in one case at 60 bushels, and in one at 64 bushels, averaging in weight from 50 to 60 lbs. to the bushel. The yield of oats is in many instances stated at 40, 45 and as high as 60 bushels to the acre, with a weight averaging over 40 lbs. to the bushel, and going as high as 47. In some instances the yield of rye is put at 40 bushels, average weight 53 lbs. Buckwheat is stated to yield 40, 45, 50 and even

60 bushels to the acre, weighing from 40 to 52 lbs. to the bushel. Indian corn is returned as yielding 50 and 80 bushels to the acre, the average weight being 60 lbs. to the bushel. Potatoes are returned in some cases at 400 bushels to the acre; turnips at 700, 800 and even 1,000; carrots at the same. Mangolds at 600 to 800 bushels, and hay as high as 3 and 4 tons to the acre.

Similar results to these are realized every year by good farmers upon good land, but the average for the Province is reduced by the fact that much land, not of the best quality is cultivated by reason of its proximity to the towns or main thoroughfares of traffic, and that many of the farmers are unskilful, not to say shiftless.

As by far the larger part of the vacant land now recommended for settlement in New Brunswick rests upon the Upper Silurian formation, and as upon this formation lie the best farming districts in Eastern North America, a more detailed description of this part of the Province is given:—

THE FERTILE BELT.

Extending across the whole north-western part of New Brunswick, from the International Boundary to the Bay of Chaleur, is a district which by reason of its great fertility has been called "The Fertile Belt." It comprises the greater part of the counties of Carleton, Victoria, Madawaska and Restigouche, containing by estimation 2,500,000 acres, including land, granted and ungranted, cultivated and in a state of nature, and nearly all of it may be classed as first-class upland. Of this area fully 2,000,000 acres are unoccupied by settlers.

The soil of this tract has been formed by the "weathering" of Upper Silurian slates and limestone, fertilized by the decaying forest leaves and other vegetation during thousands of years. It possesses the valuable property of increasing

in fertility whenever it is first ploughed, the first one or two crops being invariably put in without ploughing. Prof. Johnston, after extensive enquiries and explorations, said that "of this formation (the Upper Silurian) a large part of the richest upland soils of the Province is formed, the fertile, cultivated and equally promising wild lands of the Restigouche, and those on either side of the St. John, rest upon and are formed chiefly from the debris of these rocks."

Of the composition of the soil itself, which he classes as first-class upland, he says:—

"The rocks from which it is formed are generally slatey clays more or less hard, but usually crumbling down into soils of considerable strength and great tenacity. Among them are beds of valuable limestone, and so far as I am informed, from the reports of Dr. Gesner, the presence of lime as an ingredient of the slatey rocks themselves, a chemical character of much value, distinguishes the soil of these upper Silurian strata."

Professors Hitchcock and Goodale, and Dr. Holmes, recognized authorities on this subject in the United States, said in a report to the Legislature of Maine that the soil in this belt, which extends into Maine, is "the best of upland." They also say that "it is capable of making an excellent stock-growing country;" that the character both of the soil and climate adapts it particularly to wheat growing, and that its capacity for sheep-raising is practically unlimited.

Mr. Ellis of the Canadian Geological Survey, reported that in this northern fertile belt there was over four thousand square miles of area, a very large proportion of which is highly suitable for settlement. He also expressed his belief that if the district were opened to settlers it would be at once occupied.

Charles S. Lugrin, Secretary of the N. B. Agricultural Board, thus spoke in his report to the Legislature, made in 1870:—

"The 'ridges,' as the uplands are called by the people, are

covered with a luxuriant growth of rock maple, yellow birch and other hard woods. Copious springs of water abound, and the open character of the forest renders it easily cleared. One cannot speak too highly of the fertility of the ridges and their value to the Province. I have passed over some of them and have found for miles the same unbroken succession of luxuriant forest. The trees stand wide apart, very little underbrush obstructs the view, and the whole scene looks more like a beautiful park than an unclaimed wilderness."

Richard Bellamy, Deputy Crown Land Surveyor, refers to the unsettled portion of this belt, over which his extensive explorations have extended, in the highest possible terms, and as he is a practical farmer as well as an experienced woodsman, his opinion is entitled to great weight.

Edward Jack, a recognized authority, who represented the Province at the Forestry Exhibition, said in a letter to the N. B. Railway Company:—

"For the largest body of good wilderness farming land in New Brunswick, I beg leave to point to the tract lying north of the Tobique (the Company's estate), embracing nearly a million acres. By far the greater part of it is agricultural land of excellent quality, free from stone, and well covered by a splendid forest of rock maple and other hard woods."

Hon. John Costigan, Minister of Inland Revenue for Canada, says:—

"I beg to state that the vacant (*i. e.*, unoccupied) land in Victoria and Madawaska is the largest and best tract of agricultural highland in the Province. The soil is good and there is an abundance of the best water in the world."

Professor Hind crossed the eastern extremity of this district in his geological survey of the Province, and although his references in his report to the agricultural capabilities of the country are very few, he says that he observed "large areas of cultivable land in that locality." Moses H. Perley in his hand-book, speaks of this soil as very fertile. William

B. Mills, referring to that portion of this belt owned by the New Brunswick Railway Company, and which is in no wise different from the remainder, says :—

"I state as the result of my own observations, made in a series of explorations into this district that as an agricultural region the land north of the Tobique and a portion of the land south of the Tobique is unsurpassed by any land in the eastern part of Canada in its fertility and general adaptability to farming purposes. Thi land possesses the advantage of being well watered; it would scarcely be possible to lay off one hundred acres in any one block, which would not contain either a brook or a copious spring."

To such testimony as this it may seem superfluous for me to add my own; but having for fifteen years devoted much attention to this part of the Province, both by personally exploring the country and by a systematic series of enquiries and having given the results of my observations such publicity as would ensure the correction of any errors, if such existed, my observations may possibly have a weight which they might not otherwise possess. These are briefly as follows :—

An area of unoccupied land, belonging in part to the New Brunswick Railway Company, but principally to the Crown, and containing by estimation 2,000,000 acres, nearly all equal in fertility and fitness for agriculture to the best agricultural districts now under cultivation in the Province, and similar in all essential points to the celebrated farming district of Aroostook County, Maine, admitted to be the finest rural section in the New England States, extends across the northwestern part of the Province of New Brunswick.

Wherever settlements have been established upon land of a similar character in New Brunswick they have invariably been prosperous.

The land is generally free from stone, well watered, easily cleared, and improves with cultivation.

The tract is sufficiently level to permit of the construction of a line of railway across it, connecting the New Brunswick Railway with the Intercolonial Railway.

A highway road, ninety miles in length, from Campbellton on the Intercolonial Railway to Grand Falls on the New Brunswick Railway, could be so located as to be nearly straight, and yet to traverse good land for its entire length.

The country is slightly undulating but without any high elevations.

Large tracts of valuable timber land are in the neighborhood of this tract, and the first-class land is itself covered with a heavy growth of merchantable wood.

The climate is favorable to agriculture and stock-raising.

Reference has been made to the fact that a large part of this fertile belt is owned by the New Brunswick Railway Company. It was given to the company as a bonus to aid in the construction of a railway up the valley of the St. John, and being held in reserve for the company for some years until earned, and never having been placed on the market by the company, it remains unoccupied by settlers, although the land on the southern and western sides of the grant has been nearly all taken up and is occupied by thriving farming communities. This land is now offered for sale in lots to suit purchasers. The address of the agent of the company is *Fredericton, New Brunswick*, and from him particulars as to price, &c., may be obtained. The company say of their settlement land:—

"The principal tract of settling land owned by the company is surrounded on three sides by settlements already well established, and on the fourth side is abutted by fertile Crown lands, into which a colony could extend itself for forty miles, or as far as the line of the Intercolonial Railway, and thus while the settlers on the borders would have ready access to the markets afforded by

the towns and cities, those in the interior would have an independent market at the scene of the logging operations.

"Owing to the abundance of good land at one time held by the Crown in New Brunswick, and the almost nominal terms at which it could then be obtained, farmers have been very prodigal of it, and the system of cultivating extensive tracts superficially, instead of smaller areas thoroughly, has generally prevailed. The census gives the acreage of improved land per head of the population, including merchants, mechanics, laborers, etc., as *six* in the County of Carleton, which, as has already been said, is similar to the company's land in point of fertility, and in the character of the crops, and the other industries, besides agriculture, for which it is best adapted. Six acres per head of the population may seem a large amount, and it is, but the reason is that systematic cultivation of the soil was for a long time almost unknown in New Brunswick, the farmers of the last generation preferring to clear new land, rather than maintain the fertility of that already under cultivation. In this way very large farms, much of the land being uncultivated though "improved," became common. This increases the ratio of "improved" land in proportion to the population. At this rate, the first-class farming land owned by the company would sustain a resident population of 150,000 people, and according to estimates compiled respecting the adjoining County of Aroostook, would produce food sufficient for 600,000 people. It will thus appear that there is upon this tract a field for the establishment of large colonies, to be reinforced from year to year, as the breadth of cultivated land increases, and other industries, besides agriculture, engage the attention of the people."

THE DYKED LANDS OF WESTMORLAND AND ALBERT COUNTIES.

> "Dykes that the hand of the farmer had raised with labor incessant
> Shut out the turbulent tides, but at stated seasons the flood gates
> Opened and welcomed the tide to wander at will on the marshes."
>
> —*Longfellow.*

Dr. Dawson, the learned author of "Acadian Geology," speaking of the tides at the head of the Bay of Fundy, says:

"At low tide wide flats of brown mud are seen to extend for miles, as if the sea had altogether retired from its bed, and the

distant channel appears as a mere strip of muddy water. flats are composed of a fine silt, the result of the attrition long ages of the uplands of New Brunswick and Nova which is carried into the bay by the numerous rivers flowi it. This mingled with the remains of marine plants and has by a slow process during long centuries been borne by t tides of the bay and deposited in vast tracts, lying in the (of Albert and Westmorland in New Brunswick and in sor of Nova Scotia."

From the earliest occupation of Acadia by the Fre importance of reclaiming these deposits from the their great value in an agricultural point of view h well understood. In 1612 the early French navigat the Jesuit fathers who accompanied them spoke o marshes extending as far as the eye could see, a earliest settlers were not long in utilizing them, for it stated in a report made to the King of France abo that the Acadians "have skilfully dyked the salt and on these dykes they raise with so little labor larg of hay grain, and flax, and feed such large herds of fin that an easy means of subsistence is afforded, causin to altogether neglect the rich uplands." These m reclaimed by these French settlers upwards of two c ago, are yet cultivated with undiminished profit, and tunately with the same result, in some cases, in res the rich uplands as the Intendant of the colony com of to his Sovereign.

The Marshes are reclaimed from the sea by the cons of what are called dykes and aboideaux. Dykes ar shaped structures of earth, about twelve or fifteen fe at the base and from four to eight feet high. Ab are the enlargements of the dykes where they cross These are often extensive structures, hundreds of length and a hundred feet or more wide. They c

twenty dollars an acre. The amount of land now
in New Brunswick is estimated at 65,000 acres.
soil of the dyked lands is a very tenacious loam and
in phosphates, lime and salt. It is well adapted to
wth of hay and cereals. Grain grown upon it is
bly heavier and brighter than that grown on the
. Prof. Sheldon, of the Wilts and Hants Agricultural
, Downton, Salisbury, England, says:—

land within the dykes is firm and solid, of excellent quality
ered with a thick sward of coarse, though vigorous and
e grass. The fertility of these reclaimed soils is unusually
hey are never manured, but cut on the average upwards of
of hay to the acre—a yield which has been sustained for
ars and shows no signs of running out.
land, however, under this system of farming is found to
weedy in the course of time, and it becomes expedient to
portions of it in rotation, at intervals of ten or twelve
king one crop of oats with which new grass seeds are
form the new sward which is desired. This once plough-
und to kill the weeds for the time being, and they do not
come very troublesome for some years; and when at length
the land is simply ploughed up again in the way described.
system of cultivation of new dyked land is very simple,
sists of surface draining by cutting ditches twenty-two
art, three feet wide at the top, two feet nine inches deep
ing to one foot wide at the bottom. About three years
land is ploughed in ridges of six to eight feet wide,
ats and seeded down with timothy and clovers. It





events improve the quality of the grass. By a well devised s of drainage, carried out in a workmanlike manner and by t percolation of rain water through them these dyke lands lose much of the saline element which at present is not fa to the growth of the finer grasses and they would become f the growth of roots, green crops and grain, while as pastur would be greatly improved."

The dyked land produces naturally three kinds of called respectively couch, broadleaf and water grass variety known as couch is not the same as the trout grass of that name found on the uplands; it only res it in appearance and it will not grow upon the uplan is very nutritious and makes excellent hay for hors is claimed that horses will thrive as well on marsh h eight quarts of oats a day as upon upland hay and quarts of oats. Broad leaf is a heavy stalked gra broad, coarse leaves; it is also highly nutritious an adapted for cattle, which fatten rapidly upon this gra grain. It possesses stringent properties, which ren favorable for forced feeding, as they prevents co Water grass, or "three square," is a leafy, triangular very rich in saccharine matter; combined with clove excellent fodder for milch cattle, promoting the flow c rather than the growth of muscle and fat. The couch on the dryer portions of the dyked land; the broad lea that which is moderately dry; and the water grass up wetter portions.

When the land is seeded down with clover and ti the clover generally disappears after a year or two a timothy a few years later, being supplanted by white and couch. Some farmers have practised seeding bie after haying, thereby keeping up the growth of the vated grasses and producing a more merchantable b more nutritious hay.

Marshes to be kept in the best condition require thorough draining, and should be broken up frequently. If this generally understood rule were acted upon to a larger extent even better results would be obtained than those which have made so many marsh owners affluent. By ploughing every five or six years, and bringing to the surface about an inch of the deeper soil, the best results might be made perpetual. Three tons of hay to the acre is the ordinary yield of the best kept marsh.

All kinds of marsh are much improved by being occasionally flowed by the tide. It results in a diminished crop the following year, but this is succeeded by several years of increased yield. In some cases the tide is let in by the common consent of proprietors, but this is usually difficult to obtain. Nature occasionally takes the matter in her own hand, and the tide breaks through the barriers, overflowing the meadows and depositing a rich layer of fertilizing silt. Wheat is found to be a very profitable crop on the dyke lands after these floodings, as high as fifty bushels to the acre having been produced.

The dyke lands or marshes, though usually belonging to several proprietors, are not divided by fences and are pastured in common by the several owners, who are allowed to feed on the aftermath a number of cattle proportionate to the extent of their holding of marsh. For pasturage these lands are unsurpassed. The beef raised on the marshes is of superior juiceness and flavor, and is esteemed as the best produced in the Province.

The price per acre of marsh land depends very much upon circumstances, but from $100 to $150 would be an average. In some localities good marsh land can be bought as low as $50 per acre. In others where the area is small and the land is consequently better cared for it is held at very much higher rates than those above quoted.



The mud of the undyked marsh land is a valuable fertilizer for the uplands. In the Parish of Coverdale, Albert County, the land is naturally of not high fertility, but every year the farmers haul immense quantities of this mud and spread it upon their fields and have thereby brought the soil up to a high standard. The Coverdale farmers are among the most prosperous in the Province.

The results obtained from the use of this mud are surprising. A member of the Harvey Agricultural Society recently stated that seventeen years ago he bought the farm he lived on. A four acre field was so run out that he only obtained from it two tons of poor, weedy hay. The following winter he hauled 240 loads of marsh mud and applied it to the field; two men and a team did the work in twelve days. Next year he cut from the same field twelve tons of good merchantable hay. He said that it had ever since raised heavy crops and the line of demarcation between the fields thus treated and those adjoining is still visible. Another farmer stated that several years before he broke up an acre and a half of upland and sowed it with oats. It yielded him 20 bushels. The following winter he spread upon the field 150 loads of marsh mud, and sowed it with oats the following spring. The yield this time was 140 bushels of oats. Many other similar instances could be cited.

Though much of this dyked land is held by persons who appreciate its value and farm it properly, there are tracts which, for various reasons, are open to purchasers at a fair value, and there are large areas yet unreclaimed. The attention of farmers with capital, who may contemplate settling in America, is especially directed to these tracts of land, the value of which, under a judicious system of tillage, can hardly be over-estimated.

CHAPTER VII.

THE PROVINCE DESCRIBED BY COUNTIES.

Brunswick is divided into fifteen Counties. Char- in the southwest; St. John and Albert front upon of Fundy; Kings, Queens, Sunbury, York, Carle- oria and Madawaska are in the valley of the St. Westmorland, Kent and Northumberland border on of St. Lawrence and Northumberland Strait, Glou- d Restigouche on the Bay of Chaleur.

CHARLOTTE COUNTY.

ea of Charlotte County is 822,500 acres. It includes ds of Grand Manan, Campobello, and the West Isles. ne half the area of Charlotte County is yet vested own and of the ungranted portion it is estimated),000 acres are adapted for agriculture. Of the portion 218,688 acres were stated by the census of e occupied by settlers, the remainder being held as reserves. The population of Charlotte County in 87.

the same census the area of cleared land in

The live stock in Charlotte in 1881 were as follo
horses 2,745, horned cattle 14,505, sheep 15,136, swine
The clip of wool was 48,148 lbs.

The County of Charlotte, while not regarded as o
first rank in an agricultural point of view, contains
of the best farms in the Province, and the large don
demand for produce and the readiness of access t
markets of the United States at all seasons of the year
it a desirable location for farmers.

In 1881, 27 saw mills, employing 435 men, were in o
tion in Charlotte; the total production of manufa
lumber being valued at $314,585. On the St. Croix,
which forms the international boundary, are numerous
mills, some of which are in the State of Maine, but o
persons who reside in the County of Charlotte, N. B.

Fishing is an important industry in this county
1881, 1981 persons were employed in the fisheries; the
consisting of 20,072 quintals of cod, 46,882 quintals of
dock, hake and pollock; 65,740 lbs. of lobsters, 20,654
of sardines and 10,000 bbls. of other fish, besides 6
gallons of fish oil.

Ship-building is prosecuted to some extent in Cha
County.

The Red Granite Quarries at St. George, give employ
to a large number of men, and are being developed in



PRINCE WILLIAM STREET—*West Side.*



PRINCE WILLIAM STREET—*East Side.*





f Fundy, and the Grand Southern Railway
)nnection with the continental railway sys-
rket for the granite is in Canada and the
and it is claimed that owing to the enormous
eposit, and the facilities for mining and ship-
be possible to deliver the granite in Europe
)pete with the output of the Scotch quarries.
of capitalists is invited to these Charlotte
:s.

Anthracite coal has lately been discovered at
his county. Several shafts have been sunk
llent coal has been raised. The extent of
s not been ascertained accurately, but it is
)ve of considerable value.

posits of copper and other minerals of econo-
Charlotte County, some of which have been
)ped. The county presents a promising field
rations.

is the St. Croix Cotton Mill, erected within
l having a capacity of 20,000 spindles.

:ounty in New Brunswick contains a greater
ellent water powers than Charlotte, and the
e county, its excellent system of internal and
unication, and its favorable climate adapt it
he establishment of manufactories.

is the shiretown of the county. It has a
2,128 and is beautifully situated on a penin-
into Passamaquoddy Bay, at the mouth of
The excellence of its harbor has already been
on the completion of the several lines of
led to give shorter communication between
nd the interior Provinces of Canada than is
Intercolonial Railway, it is likely to become
centre of much importance. It is now a

favorite resort of summer tourists, who are attracted by its delightful climate and its unrivalled facilities for sea bathing, yachting and fishing. Several excellent hotels afford accommodation for transient visitors, and many prominent Canadians have cottages here at which their families reside during the summer. A sardine factory, lately erected here, does a large and profitable business—the fish being caught in the bay. A branch of the New Brunswick Railway runs to St. Andrews and gives connection with all points east and west. There is also regular communication by steamer with St. John, St. Stephen, and Boston, Massachussetts. St. Andrews is a port of registry, and on the 31st December, 1884, 188 vessels with a tonnage of 12,263 tons were registered there.

St. Stephen, population 2,338, is the laregst town and most important business centre in this county. It is situated on the St. Croix river sixteen miles above St. Andrews. St. Stephen has a large domestic and foreign trade and the former especially is rapidly increasing. Its principal export is sawn lumber. There are factories of various kinds here and extensive wholesale houses. It is one of the most thriving towns in New Brunswick; the St. Stephen's Bank. capital $150,000 is located here. The town is lighted with gas and arrangements are being made to introduce an artificial water supply. The country in the neighborhood of of the town is well adapted to agriculture.

The New Brunswick Railway has a branch to St. Stephen; the Grand Southern Railway connects the town with St. John by way of the coast, and the town enjoys the same facilities in the matter of steam connection as St. Andrews Calais, a thriving town in the United States, lies directly across the St. Croix from St. Stephen.

Adjoining St. Stephen, so as to form a continuous town is Milltown, population 1664, where there are several larg

mills for sawing lumber. The St. Croix Cotton Mill is in this village, which is one of the most progressive and wealthiest communities in the Province.

St. George is a village at the mouth of the Magaguadavic river and on the line of the Grand Southern Railway.

Charlotte County presents a limited number of opportunities for farmers with capital to purchase excellent improved farms, and the facilities for engaging in manufacturing are many.

ST. JOHN COUNTY.

St. John County is a narrow strip of land lying along the Bay of Fundy coast. Its area is 386,400 acres, all of which are granted except about 25,000 acres. The surface is rugged, and a considerable portion of the county is very uninviting to the farmer, but the land when once tilled, has been found to be very productive.

The population of St. John County by the census of 1881 was 54,966.

Only 25,158 acres of land in this county were cleared, according to the census of 1881, and of this area 14,096 were under cultivation. The principal crops grown were oats 46,617 bushels, potatoes 128,329 bushels, hay 12,703 tons; of butter 154,649 lbs. were made. There was of live stock as follows: horses 3,011, horned cattle 5,407, sheep 2,263, swine 1,061. The proximity of the cities of St. John and Portland—population, with suburbs, about 43,000—renders the intelligent prosecution of agriculture in St. John County very profitable notwithstanding the unfavorable character of the soil in general.

The city of St. John—population in 1881, 26,127—and the city of Portland—population in the same year, 15,226—are both situated in St. John County, and although under separate municipal governments, adjoin each other so closely and are so closely connected in business that they may be

considered as one city. Together they form the largest centre of population and the most important business centre in the Maritime Provinces of Canada. These cities are situated at the mouth of the St. John river. The excellent character of the St. John harbor has already been referred to,* and it may be added here that the harbor, although affording all the accommodation the present trade of the port requires, is capable of great extension. Without taking into account the great space, known as Courtenay Bay, accommodation could readily be provided in the harbor proper for fifty or sixty steamers of the largest class, and no where could dry docks and basins, and wet docks, be erected at less cost than here. The security of the harbor is a consideration of the utmost importance. At none of the points where wharves have been built or their erection has been proposed would vessels be in an exposed position; in fact, no part of the harbor is dangerous during a storm, as is proved by the fact that it is regularly crossed by a ferry at all times of the year, the trips being suspended only on such rare occasions as the violence of a storm renders it impossible to see lights or hear signals.

St. John was founded in the year 1783, by the United Empire Loyalists, who came to the Province after the American Revolution. The valuable timber lands in the interior of the country soon gave the place considerable commercial importance, and, in time, its fame as a ship-building and ship-owning port became widely known. On December 31, 1884, the number of vessels on the register of St. John and their tonnage was as follows:—

THE SHIPPING OF ST. JOHN.

	No.	Tons.
Sailing vessels on the register Dec. 31. 1883,	626	245,869
Steamers " "	51	5,267
Total,.....	677	251,136

*See Page 37.

According to the census of 1881 there were invested in the City and County of St. John in industrial establishments $3,966,079, the number of hands employed was 5,997, the total amount of wages paid was $1,435,390, and the output of material was valued at $7,648,067. Some of the principal articles manufactured were as follows:—

Lumber,	$2,621,365
Produce of Foundries, &c.,	648,910
Cars and Locomotives,	213,500
Wrought Stone,	105,064
Carriages,	98,200
Boots and Shoes,	507,519
Furniture,	164,600
Clothing,	229,230
Ships,	414,032
Soap,	119,000

In St. John, in 1881, the number of men employed in the fisheries was stated by the census to be 544, the catch of fish consisting principally of herrings and gaspereaux, of which about 35,000 barrels were taken.

St. John and Portland are for the most part well built cities, particularly the former, of which many of the business streets would be not out of place in more pretentious cities. The Churches of St. John are nearly all very fine structures. A great fire in 1877 destroyed nearly half the city and the structures which have taken the places of those consumed are many of them very handsome.

"The following Banks have branches in St. John:—The 'Bank of Montreal,' paid up capital $12,000,000, (about £2,400,000 sterling,) London, England, office, 9 Birchen Lane, Lombard street, E. C.; the 'Bank of British North America,' paid up capital, about $4,866,656, (£1,000,000 sterling), London, England, office, 3 Clements Lane, Lombard street, E. C.; the 'Bank of

private Banking houses with considerable resources. A Bank under control of the Dominion Government accepts at a good rate of interest. The Post Office Money Order ment offers the same facilities as in England. The Ameri Intercolonial Express Companies transfer money from points at low rates. The Electric Telegraph Compan transfers by telegraph at moderate rates."*

St. John has connection by rail with all points e west and with the interior counties of the Provi splendid line of steamers ply between this port and and other steamers afford regular communication wit Scotia. The port is visited during the year by ve freight steamers from Europe. No vessel ever ne St. John in ballast, as there are lumber cargoes alwa ing.

St. John offers many facilities for manufacturin is cheap. Wood is largely used by the mills and which employ their refuse material in this way. abundant and cheap; the Grand Lake mines up John river, the Joggins mines at the head of th Fundy, and the Spring Hill mine in Cumberlan Scotia, are all within easy reach, and fuel for all can be obtained at very low prices. Mr. Cornwall, already been quoted, says:—

"In cotton goods the natural dampness of our climate valuable service; the loss of time and material in

unsurpassed in the Dominion. In woollen manufactures many striking advantages. This Province is now becom- ge producer of raw material. The advantages for sheep re becoming known, and much of the land is being uti- this purpose. For woollen as well as cotton goods the r is most valuable and effective in rendering dyeing col-

e manufacture of leather, which has, and always will be a itable business in this Province, the local development of sing adding much to the advantages. There are ample f Hemlock Bark, one of the most essential elements in ess, almost at our doors. The export of the extract from forms an important item in our commerce.

e iron working industries of all kinds, the abundance of easy access to the best of iron, cheap living, and most t—cool summer climate, mark such a number of points or, that if properly known, would leave little necessity r competitors."

g the most noticable public buildings in and about , are the Custom House, said to be equal to any ucture of the kind in America, the Post Office, the ilding, the Country Market, the Provincial Lunatic and the Public General Hospital.

ater supply of the cities of St. John and Portland is t. The cities are lighted with gas and electricity.

ea may be formed of the trade of St. John from the t in the year 1882, there arrived at the port 2,004 with a tonnage of 187,858 tons; the arrivals from ports being 1,536 vessels of 493,783 tons. The ex- umber in 1882 was as follows:—

.....207,000 etc.

Palings,	1,952	m.
Laths,	129,958	"
Shooks,	71,207	"
Shingles,	14,643	"
Spars,	578	
Sleepers,	55,593	

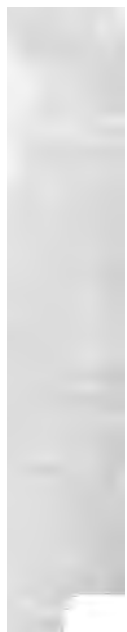
The only other towns in St. John County are:—St. Martins, population 2,500; a ship-building town on the Bay of Fundy, most beautifully situated on a commodious harbor. A railroad, the St. Martins and Upham, connects the village with the Intercolonial Railway. There are manganese mines in operation near St. Martins. Fairville is a suburb of Portland. Its population is about 1,500. It is the first station out of St. John on the New Brunswick Railway.

Connection has lately been made between the railway systems on the east and west side of the St. John harbor by a bridge over the St. John river at the falls.

KINGS COUNTY.

The County of Kings adjoins the County of St. John on the north. Its area is 877,200 acres, of which the greater part is granted. It is estimated that of the ungranted lands about 4,000 acres are adapted for immediate settlement. In some respects Kings County takes the lead of all the counties in point of agricultural progress. In 1881, when the last census was taken, there were in this county 113,640 acres under crop, or somewhat more than in any other county. This position occupied by the county is due in part to the excellent character of its soil, and in part to the proximity of the St. John market, and these facts render the vacant lands in the county very desirable locations for new settlers. Not many farms in Kings County are in the market, but occasionally a good opportunity is afforded to a





man of capital, to establish himself upon an excellent improved farm in this county.

Kings County is divided into two unequal parts by the St. John river, which here expands out into an extensive bay. The eastern part of the county is much the larger. The Intercolonial Railway intersects it through the centre, so that no farm in the county is more than 10 or 15 miles in a direct line from the railway. The St. Martins and Upham Railway runs from Hampton station through Kings and St. John Counties to the harbor of St. Martins, and the Central and Havelock, Elgin and Petitcodiac Railways, the latter now being constructed, also intersect Kings County. It is therefore excellently well provided with railway accommodation, and a complete system of highway roads, with good bridges over the streams extends to every section.

The nearest of the Kings County villages to St. John is Rothesay, nine miles distant on the Intercolonial Railway. Rothesay is a beautiful village on the bank of the Kennebeccasis Bay, an arm of the St. John. It is the home of many St. John merchants. The most important town in the county is Sussex, on the Intercolonial Railway and in the heart of an agricultural section which cannot be too highly praised. The population of Sussex is about 2,000. There are several industrial establishments here of more than local importance. The Markhamville manganese mines are situated a short distance from Sussex. They have been operated over twenty-five years, the output in 1881 was 2,126 tons. Over 130,000 gallons of milk are shipped from Sussex to St. John daily.

Other villages in Kings County are Barnesville, where there are saw and grist mills, a tannery and a carriage factory. It is situated on the St. Martins and Upham Railway and in the heart of a fine agricultural section. Clifton

is a beautifully situated village, of about 200 pop
the north bank of the Kennebeccasis. It is a sl
village, but great attention is paid to the cul
strawberries and raspberries, thousands of qu
shipped daily during the season, principally to t
States.

Hampton is the Shiretown of Kings. It is on
colonial Railway, and has a population of about
country in the neighborhood is well adapted to fa
large match factory is located here.

Penobsquis is a village of 500 population, on
colonial Railway. A pulp and paper mill are lo
manufacturing the coarser varieties only.

The principal agricultural products of King
were:—wheat 45,601 bushels, oats 333,995 bus
wheat 311,348 bushels, potatoes 734,369 bushels,
tons. Of live stock there were 6,310 horses, 28,
cattle, 28,702 sheep, 5,471 pigs. 971,184 pound
were made in this year in Kings County. Thes
show a most gratifying increase and prove that t
ture of Kings is progressive.

There were 47 saw mills in operation in King
employing 337 men, and producing $155,343
manufactured lumber. The other lumber produc
of 33,343 cubic feet of pine, 12,145 cubic feet
26,080 cubic feet of birch and maple, and 42,7
firewood.

Valuable grey granite quarries are found in Ki
St. John river. The output in 1881 was 4015 to

One of the finest agricultural sections of Kin
and one wherein there is greater room for expa

gs and a railway, the Havelock and Elgin and Petitdiac, has been constructed into it from the Intercolonial. The proposed short line railway from Montreal to Halifax, will pass through this parish. At Havelock Corner are some of the finest farms in New Brunswick. This settlement might be extended for a considerable distance into Queens, Kent and Westmorland Counties, and as the soil is of the highest fertility, with markets convenient, it may be safely recommended to settlers as one of the most desirable localities in the Province.

The western part of Kings County is intersected by the New Brunswick railway, along which on the river shore are numerous summer resorts of people from St. John and elsewhere. The river parishes of Kings are among the most prosperous agricultural sections of New Brunswick.

The population of Kings County, according to the census of 1881, was 25,617.

The area of cleared land in this county has increased threefold in the last 30 years.

QUEENS COUNTY.

Queens County adjoins Kings County on the north. Its area is 924,000 acres, of which about two-thirds are granted. It is estimated that of the ungranted portion about 100,000 acres are adapted for settlement. The area of cultivated land in the county was put at 70,000 acres in 1881. Queens is intersected by the St. John, and its great tributaries, the Grand Lake and Washademoak Lake, and a considerable portion of the area embraced within the county is composed of lakes and rivers. The settled districts for the most part border on the river and the lakes. The land is generally very good, and some of the finest lowlands or intervals and islands in the Province are in Queens County.

The population of the county is 1881 was 14,017. The

principal occupation of the people is agriculture, but lumbering forms an industry of considerable importance, and so does the shipping of cordwood to St. John and to the lime burners of Rockland, Maine.

Coal mining is carried on to some extent, but this industry is yet in its infancy. Hitherto the system of coal mining has been thoroughly unscientific, the vein mined from, which is about twenty inches in thickness, lies near the surface, and any farmer who has it upon his land digs up what he wants either for his own use or for sale. The known area of the coal bearing district in Queens and Sunbury is about 600 square miles. The output of coal in 1881 was 4,406 tons, but it has largely increased since. During the last year the New Brunswick Railway has used this coal as fuel for their locomotives.

The area usually considered as embraced within the coal mines of Queens and Sunbury is 40 miles in length with a breadth of 15 miles. It seems to be pretty well settled that over the greater part of this district the surface vein of coal extends and, if this is so, the quantity of coal contained in it cannot be far short of 500,000,000 tons. The total output of coal in Canada is less than 1,500,000 tons a year, so that the surface vein contains more than enough coal to supply the requirements of Canada, at the present rate of consumption, for over 300 years. Whether any deeper veins exist is not known. In a memorandum made by Dr. Gesner some years ago he speaks of bituminous shale and coal "eight feet thick at a depth of 250 feet," but he omits to mention the locality where it was found. Without further particularizing or attempting to give accurate data, where much must be left to conjecture, it is safe to assume it as satisfactorily estabished that these coal mines contain a supply of coa practically inexhaustible. The quality is good. It is quit equal to other varieties in common use as a steam coal. Fo

ths' use it is said to be particularly good, and for
ɔ coal is superior to it. The coking of bituminous
ıow an important industry in various parts of the
States. The Central Railway, the route for which
ed and on which the work of construction will
ıe begun, will pass directly through the centre of
l fields and must tend greatly to develope them.
ıgranted lands of good quality in this county are
ɔ be found in the northeastern extremity, although
racts, where the soil is suited to farming, are to be
the western part of the county between the St.
er and the New Brunswick Railway. The ungranted
the northeastern part of the county will be opened
entral Railway. This will give the fine section of
lying around the head of Grand Lake connection
John and Fredericton, and it is not unreasonable
; that this district will become, at an early day, one
ost thriving and progressive in the Maritime Prov-
Canada. The proposed Short Line Railway to
Halifax, Nova Scotia, with Montreal and Quebec
through this section of Queens County, and settlers
v take up land there will be reasonably certain
hemselves, within a few years, upon or near one
rincipal through railway lines in Canada. Access
ıart of the province is now had by fine steamers,
all seasons of open water ply between the head of
ıake and St. John. An excellent system of high-
ches all settled parts of the county.

hiretown of Queens is Gagetown, a very pretty
n the right bank of the St. John

13,743 sheep, and 2,734 pigs in the county in that year, and the product of butter was 511,253 pounds. The area of cleared land in Queens has nearly doubled in the last twenty years, and the general progress of agriculture has been about in the same proportion.

The manufacture of lumber is not an important industry in Queens, the 16 sawmills in the county working principally to supply the local demands. The lumbering interest is, however, considerable, the logs being sawn in St. John. In 1881 180,756 spruce logs, 71,599 pine logs, 21,062 masts and spars, 35,000 cubic feet of timber and 229,250 cords of firewood were cut in this county.

SUNBURY COUNTY.

Sunbury County lies immediately to the north of Queens. Its area is 656,000 acres, about two-thirds being granted. Of the ungranted land about 100,000 acres are fit for settlement. The references to the soil and industries of Queens County apply to Sunbury.

The great intervals of Sheffield and Maugerville more than a century ago attracted the attention of the explorers from Massachusetts, and, as has been already mentioned, were the site of the first English settlement in the province.

Sunbury is divided into two nearly equal parts by the River St. John, and the western half is intersected by the main line of the New Brunswick Railway and the Fredericton branch of that road. Throughout the latter part of the county are vacant tracts of land well adapted to farming and rendered desirable as locations for settlers by their proximity to an important railway line, giving access to al markets. In the eastern part of the county there is consid erable good land, although a large portion of the area i marshy or stony, and not adapted to settlement.

The Central Railway, which will cross this part of Sur

ill lead to the development of those portions of it re suitable for agriculture, and will also lead to the of the coal deposits existing in parts of the country ered with a dense forest.

uilding at one time was somewhat of an import- iness at Oromocto in this county, but during the last rs it has fallen off.

shiretown of Sunbury is Burton. Oromocto is a of about 300 population at the mouth of the river of e name.

881 the number of acres of improved land in Sun- as 36,902, of which 28,756 were under crop, the l productions being: wheat 12,204 bushels, oats bushels, buckwheat 47,221 bushels, potatoes 194,937 hay 16,595 tons. The number of horses was 1,312, ed cattle 8,770, of sheep 5,923, of swine 1,588. The y of butter manufactured was 202,278 pounds. The in these respects during the last thirty years has lly equal to 100 per cent.

were seven saw-mills in Sunbury in 1881, manufac- rincipally for local consumption. Lumbering opera- ere small in the county that year, the following es only having been got out: pine logs 15,003, spruce 790, timber 11,100 cubic feet, fuel 17,899 cords.

oal deposits were worked to a small extent, the out- 881 being 1,797 tons.

is a large deposit of bog iron ore known to exist in y, and 500 tons were mined in 1881. The proximity oal renders the existence of good iron ore in this very interesting.

YORK COUNTY.

County is the largest of the river counties and lies north of Sunbury. Its area is 2,278,000 acres, less

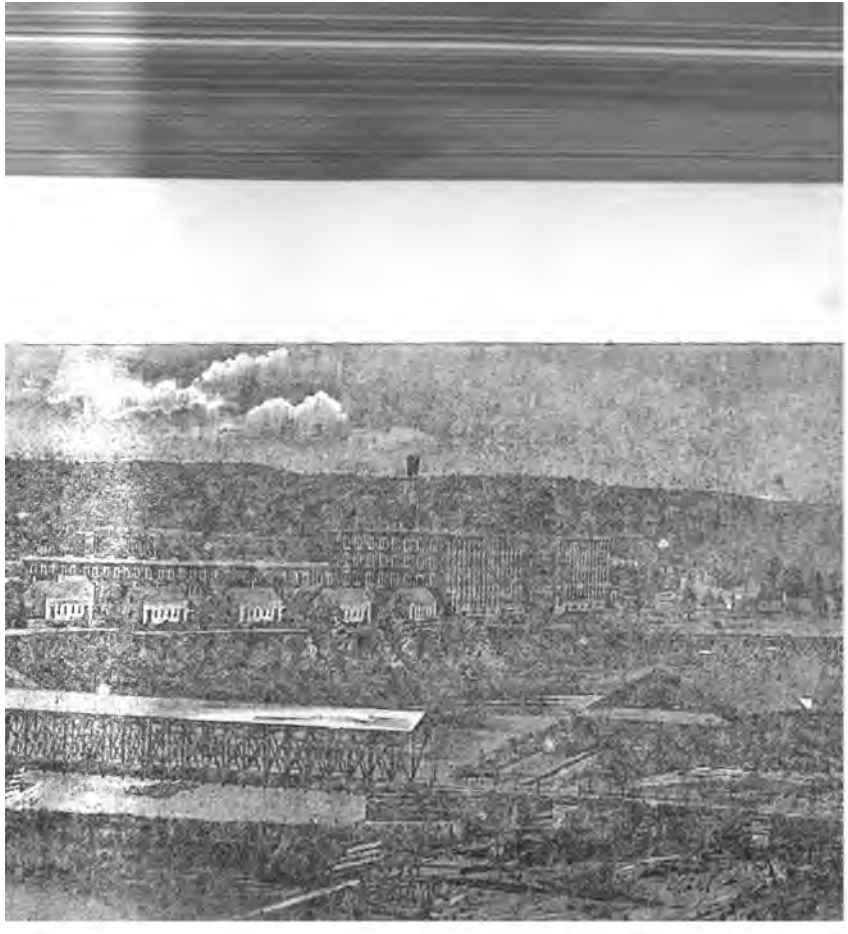
than two-thirds of it being granted, and of the ungranted portion about 200,000 acres by estimation are fit for settlement. The land under crop in 1881 was returned at 88,477 acres. This consists principally of upland, although along the St. John and its tributaries, the Keswick, the Nashwaak and others, are many fine intervals and islands. The St. John divides York County into two nearly equal parts. In the western half there is no large area of good land unoccupied, the interior consisting of rocky land, which though in most places covered with valuable timber is not at all suited for settlement, yet in the more recently settled districts are to be found many vacant lots on which the land is good.

The greater part of the vacant land in York County adapted for settlement is in the eastern half of the county, and although it is not to be found in very large blocks, settlers who wish to locate themselves on new farms in York will find no difficulty in obtaining a lot possessing the advantages of good soil and favourable location.

The population of York County was 30,397 in 1881, and the majority of the people outside of the city of Fredericton and the villages opposite are engaged in agriculture, although lumbering forms a very important branch of industry.

The New Brunswick railway extends for about 150 miles through York. The Northern & Western Railway, now in course of construction, has 45 miles of its length in this county, and the Central Railway will also be partly within it, so that in point of railway facilities York is not excelled by any county in the Province. A railway is also projected and will probably be constructed up the valley of the St. John from Fredericton to Woodstock on the western side of the river.

The principal agricultural products of York County in 1881 were: wheat 59,270 bushels, oats 390,444 bushels, buckwheat 169,834 bushels, potatoes 558,862 bushels, tur-









ber interest of York is very important. At is the headquarters of Mr. Alexander Gibson's ness, which forms a large part of the whole wood Province. There are also mills in Fredericton, ok and in other parts of the county, manufac- er for export, the total number in 1881 being ig 456 hands. The total products of the forest in k were 1,399,342 spruce logs, 25,623 pine logs, ic feet of tamarac timber, 746,000 cubic feet of r, 23,868 cords hemlock bark, and 61,501 cords

rish of Prince William, in this county, are situ- ll-known antimony mines. These are owned by called the Brunswick Antimony Company, with ce in Boston, U. S. The deposit is very extensive value, and its development affords an opportunity itable investment of a large amount of capital. o statistics available of the output of this mineral amount of capital returned as invested in indus- shments in York County in 1881, was $585,100; ust be increased by at least of $1.000,000 to recent investments made in the Gibson Cotton

favorably adapted for the prosecution of the leather tanning business. Several large tanneries are now in operation, the quantity of leather manufactured in 1881 being valued at $225,800.

Considerable business is done in York in the manufacture of agricultural implements, steam engines, stoves and general castings, furniture, sashes and doors, carriages, bricks, and various other articles.

The general condition of the county both in an agricultural, lumbering and manufacturing point of view, is satisfactory and progressive.

A large market for farm produce is afforded by Fredericton, the villages of Marysville, St. Mary's and Gibson and the extensive lumber operations on the Nashwaak, Miramichi and elsewhere, and for any surplus there are always dealers ready to purchase it for export.

FREDERICTON, the Shire Town of York, is also the Capital of the Province. This pretty little city, population nearly 7,000, is situated upon a large interval on the western bank of the St. John, 85 miles from the sea by water and 67 by rail. The Parliament Building is a large freestone structure of handsome design, recently built to supply the place of one destroyed by fire. The other chief public buildings are the Normal School, the University building, the Government House, the Post Office and Custom House, the City Hall, the Anglican Cathedral, the Presbyterian, Baptist, and other Churches. Many of the business blocks are very fine structures and so are some of the private residences. Fredericton is a trade and manufacturing centre of some importance, being a port whence a considerable quantity of bark, lumber and agricultural produce is shipped to the United States, and having factories of various kinds in full and probable operation.

The city is supplied with water from the St. John by

what is known as the Holly system, the water being pumped into mains, thereby rendering a reservoir or elevation unnecessary. A very excellent fire protection is afforded by this system. The streets are lighted with gas.

A military school, with a garrison of 100 men, is maintained at Fredericton by the Government of Canada.

On the shore of the St. John, opposite Fredericton, are the villages of Douglas, St. Mary's and Gibson, at each of which are flourishing industrial establishments, the latter also being the terminus of the Northern & Western Railway, the projected Central Railway and a branch af the New Brunswick Railway. The St. John is here over half a mile in width, and a highway bridge has lately been constructed across it.

Three miles from Gibson, on the Nashwaak river, is Marysville, the first station on the Northern & Western Railway. The population of the village is at present about 1,000, all the people being directly employed in the lumber and cotton mills there located and owned by Mr. Alexander Gibson. Hitherto the principal industry at Marysville has been the manufacture of deals for the English market from spruce logs cut upon the head waters of the river Nashwaak, but Mr. Gibson has just completed a large cotton mill, which will add greatly to the importance of the place and largely increase the population, thereby affording a local market for agricultural produce. The most extensive brick-yard in the Province is located here. There are in the neighborhood several localities where small new settlements could be established, and a few improved farms can be purchased at any time at fair prices. Millville, Canterbury, Eel River and Harvey are flourishing villages in York County.

In Mr. Perley's hand-book, published in 1851, he thus speaks of two settlements in York County: "Two very striking instances of success attending the formation of new



settlements in the wilderness, by associations of settlers, can be adduced in this county. The Harvey settlement was formed in 1837, by a party of emigrants from the north of England who landed in the Province in a very destitute condition. The tee-total settlement was formed in 1842 by a party of destitute emigrants from the south of Ireland. Both these settlements are now in a most prosperous and thriving condition; many of the settlers, who at the outset were in actual want, are now possessed of large and valuable farms, while some of them have become positively wealthy." In 1881 the census gave the following facts relative to the district embraced in these settlements: population 1,597, acres of improved land 12,873, acres in crop 8,842, quantity of wheat grown 4,929 bushels, of oats 28,717 bushels, of potatoes 42,203 bushels, of hay 2,701 tons, besides other crops.

Large quantities of indian corn are now grown in York and Sunbury counties, the corn being canned for export. This is a new industry and there are no statistics of it in the census.

The settlement of Stanley in this county is of comparatively recent date. It is situated upon the Nashwaak, about 20 miles to the northeast of Fredericton. Its progress has been even more marked than that of the settlements just mentioned.

Along the St. John river and in the neighborhood of Fredericton are many excellent farms. Upon some of them English gentlemen of moderate means have located themselves, being attracted to this neighborhood by social and other considerations. The changes which take place in families bring good farms into the market from year to year, and persons desiring to buy a home near the capital of the Province and within reach of the best educational advantages afforded in this Province—advantages equal in all

respects to any to be enjoyed in Canada—can frequently find a place near Fredericton in every respect adapted to their requirements, and for sale at a reasonable price.

York County is situated upon the coal measures and in several localities veins of coal come to the surface, but no deposits have been found sufficiently large to pay for working.

Fruit culture is an important and growing industry in York, for which its climate and soil seem to be remarkably well adapted.

An important industry, giving employment to a large number of men, is the rafting of the lumber brought down the St. John river. This is done chiefly in York County at the extensive booms of the Fredericton Boom Company situated a few miles above the city.

The New Brunswick and Nova Scotia Land Company own a large tract of excellent land in the northeastern part of York County, and although much of it has been sold, principally to settlers from England and Scotland, the company has yet remaining a considerable area, conveniently located, of which a fair proportion is suitable for settlement. The address of the resident agent of the company is *Fredericton.*

CARLETON COUNTY.

Carleton adjoins York County on the northwest. Its area is 788,200 acres, of which about 28,714 acres are ungranted. Of this area 110,701 acres were cultivated in 1881, in which year the principal production of the farms were as follows: Wheat 90,869 bushels, oats 850,851 bushels, buckwheat 324,556 bushels, potatoes 662,595 bushels, hay 42,209 tons, butter 1,003,359 pounds. The following was given as a summary of the live stock: Horses 6,380, horned cattle 23,759, sheep 24,637, swine 4,341.

The population of Carleton in 1881 was 23,365.



Carleton is, in an agricultural point of view, one of the foremost and most progressive districts in Canada. Perhaps it would be impossible to find in eastern America an area of similar extent where the proportion of first-class land is as large as it is in Carleton. Nearly the whole county is not only fit for cultivation, but consists of arable land of the best quality. It lies for the most part upon the Upper Silurian formation, with which are associated the best uplands in America. The surface is generally level, the absence of any conspicuous elevation being one of the most noticeable features in the landscape. Many of the present residents of Carleton remember when the whole county was an unbroken wilderness. Where now we see range after range of well-tilled farms, with comfortable and in many cases elegant buildings upon them, only a few years ago was a dense forest, without so much as a footpath through it. So little, indeed, was known of it that the fine district on the eastern side of the St. John, now the site of some of the finest settlements in Canada, was not regarded by the authorities of the Crown Land Office as of any value. About thirty years ago settlers began to locate themselves in the interior, and a few years afterwards a colony, brought out from Scotland through the exertions of the Rev. Mr. Glass, a Presbyterian Clergyman, was located at what is now known as Glassville. This has proved one of the most successful colonies in Canada, and its progress afford a splendid illustration of what industrious men, even if unaccustomed to the country, can do upon new farms, provided the soil is good and the locality reasonably convenient. Adjoining Glassville are Johnsville, Chapmanville, Beaufort and other settlements, all thriving and increasing in wealth. The western half of Carleton has been settled for a somewhat longer period, and is in some respects more advanced than the eastern section; but in either, if the new settler is fortu-

nate enough to secure a home, he will find himself surrounded by every convenience, with all the "resources of civilization" within his reach. Having an outlet for its products, both by water and rail, Carleton does a large business in the export of all kinds of agricultural produce, the principal market for which is in the United States. It also contains 30 saw mills, employing 188 people and turning out $168,000 worth of manufactured articles annually. The total value of manufactured articles produced in the county in 1881 was stated in the census at $624,960; but to meet the increase since that date these figures would have to be increased fully fifty per cent.

Carleton County is intersected for its entire length by the New Brunswick railway and its branches to St. Stephen, St. John, St. Andrews and Fredericton.

WOODSTOCK is the chief town and is also the Shiretown. The population is over 3,000. It is an important railway station and immense quantities of farm produce as well as a large amount of lumber is handled here. Several saw mills, foundries and other industrial establishments furnish employment. The town is fairly well provided with public buildings, and is furnished with an excellent water supply by a pumping engine. Near Woodstock are situated the iron works, not now operated, but affording an opening for practical capitalists. The ore is abundant and of fair quality. Near the town are many remarkable orchards and nurseries, and this may be said to be the home of fruit culture in New Brunswick. Sharp's nurseries have a fame which extends beyond the borders of Canada.

Hartland, Florenceville, Centreville, Richmond and Bath are important villages in this county.

Although the greater part of Carleton County is, as appears above, already granted, the area of land unoccupied by settlers is very large. The New Brunswick Railway Company,

already referred to,* owns much land here of the best quality. Persons contemplating settlement in New Brunswick could learn of vacant or available land in this county by addressing the *Surveyor General* at Fredericton.

VICTORIA COUNTY.

Victoria County adjoins Carleton on the north. It has an area of 1,324,200 acres, of which less than ten per cent. is ungranted, but only 24,051 acres were under crop in 1881. The great disproportion between the granted and cultivated land is due to two causes:—First, the settlements in the county are mostly new, and secondly, the principal part of the New Brunswick railway's domain is in this county. The latter, which is over 1,600,000 acres and embraces parts of York, Carleton, Victoria and Madawaska County, is entirely unsettled, although fully 1,000,000 acres of it are fit in every way for immediate settlement. The land in Victoria, excepting in the southeastern section, resembles that of Carleton County, being for the most part first-class upland, fertile, well watered and free from stone. In the eastern part of the county is a considerable area where the land is not suited for farming, but bears a luxuriant growth of forest containing, even after many years cutting, a large quantity of valuable lumber. All the vacant, that is unoccupied, land in Victoria, as in the rest of New Brunswick, is clothed with trees nearly all of some commercial value. The principal crops grown in 1881, were: Wheat 27,677 bushels, oats 129,026 bushels, buckwheat 68,557 bushels, potatoes 124,142 bushels, hay 8,393 tons, butter 114,634 pounds. The aggregate capital invested in this and the adjoining County of Madawaska was by the census of 1881 stated to be $75,000, producing $163,049 worth of articles, and employing 169 hands. The population of the county in the same year was

* See page 48.

6,694. Nearly all the people are engaged more or less in agriculture, but lumbering enters largely into their occupation, too much so perhaps for the successful prosecution of farming. Things are changing in this respect greatly, and increased attention is given every year to farming with excellent results.

In Victoria County are situated two new settlements, the history of which is worthy of consideration by those who contemplate making a home in Canada.

NEW DENMARK is a tract of land containing 17,200 acres, situated eight miles southeast of Grand Falls, and is all upland. It was reserved for Danish settlers and is nearly all occupied. The first settlement was made in 1872, by a party of emigrants from Copenhagen, Denmark, the majority of whom were not farmers, and were brought out by an agent who took everybody who offered irrespective of their qualifications for the work of clearing new farms. Some of the first settlers only remained long enough to earn a little money at road making, and then sought the cities; others found their way to the Western States. Many of the latter finding the disadvantages incident to pioneer life in the west much greater than what they would have to contend against in New Brunswick have since returned and taken up farms in the colony. The growth of this settlement is steady; accessions being received every year from Denmark, where its great success is now well known, but owing to the area of Crown land available for settlers in this locality being limited, the expansion has not been as great as it would otherwise have been. The present condition of the settlement affords the best possible proof of the results sure to follow from the industrious and intelligent cultivation of the first-class uplands of New Brunswick. Here we have a people, the majority of whom a few years ago were poor, and labored under the disadvatage of not



and excellent markets. It is only as yesterday tha were strangers in a strange land, the customs and clim which they knew nothing of; they went into the forest, undertaking labor which to Europeans i unusual, and to-day they are citizens of the New W landlords with a right to deal as they please with the perty. There is room in Victoria County for thous such farms as those in New Denmark.

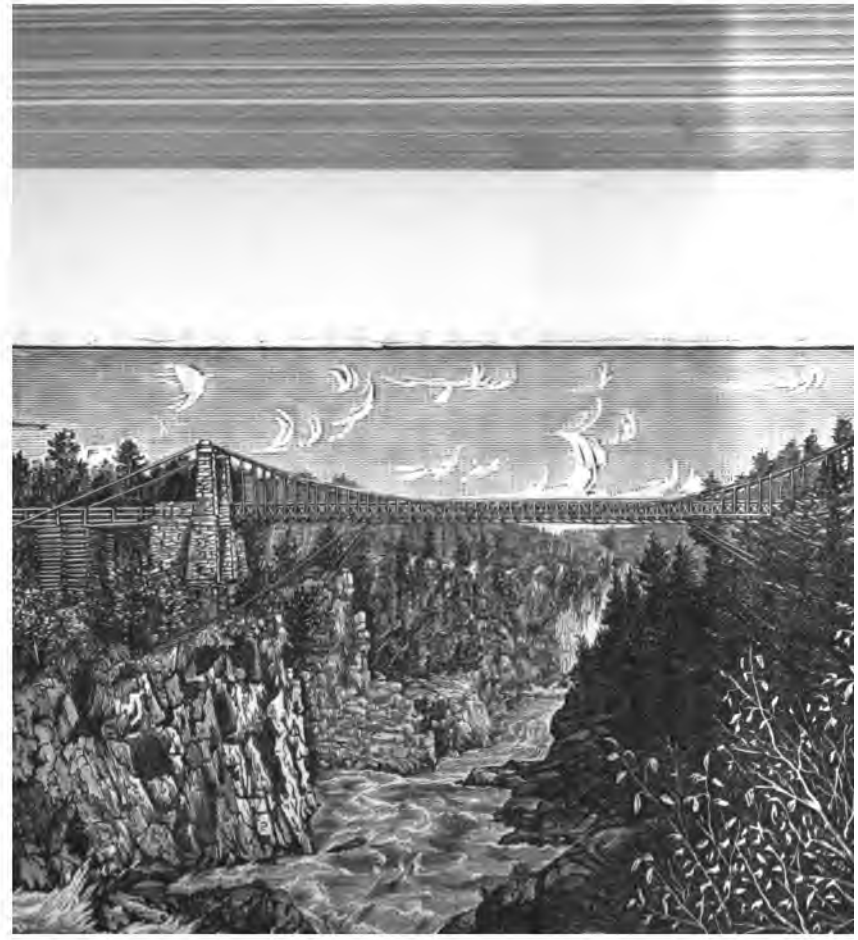
The KINCARDINE Colony is situated in the southe of Victoria County. It was founded in 1873 by co from Scotland. The land was not well chosen, a lar of it being very rough and not such as ought to hav used in an experiment such as this colony was; h selection was in accordance with the wishes of the or of the colony, who is not a resident of New Brun The soil, however, is very fertile. During the first y settlers had many discouragements and disadvantag in part to the non-fulfilment of the promises made prospectus of the colony—promises which were no ranted by the agreement with the Provincial Gover but these difficulties were soon overcome and the t tions of the colony, Stonehaven and Kintore, are no very prosperous condition. Four years after the fo of the colony, Mr. David Burns, J. P., one or

with few exceptions, we have a clearance extending back
) to four hundred yards. The houses also show signs of
ınd improvement. The buildings that have been added
ıt the requirements of live stock have been attended to.
ıds now heard are the bleating of sheep and the lowing of
ıe bark of the watch dog, the crowing of chanticleer and
rous cooing of the house dove. And we also see the neat
:den both for use and ornament, forming part of the home-
the free, independent farmer.

) years ago we were preparing to leave the home of our
ers and our dear native land, that we might obtain such a
I have described. It was then a look forward with a sort
prophetic hope, balanced with a doubt as to the attainment
ish. But the ceaseless stream of time has rolled on and
s then our fondest hope and dearest wish is now an accom-
fact. Our homes are our own, and if as yet there are no
, there is comfort, and with many when the harvest is over
ll have a year's provisions in store, and what some have
will soon be reached by all."

colony has made great progress since Mr. Burns' letter
itten. It is provided with churches, school-houses
ghways. The increase in the value of the settlement
year 1876 was stated by the colonists themselves to
$15,000.

oria contains much valuable timber. Its mineral



'he deposits of limestone are many and valuable. iretown of Victoria is Andover. Grand Falls is t village in the county. It is a place of some a summer resort, because of the wonderful scenery nity.



ɔique river (see map) which lies wholly within this sses through some of the finest land in Canada. ıve located themselves at points along its banks



understanding the language of the country, now located on productive farms well stocked and owned by themselves. Without exception they are comfortable and contented. They have a commodious church, excellent schools, and good highways, giving them communication with railway lines and excellent markets. It is only as yesterday that they were strangers in a strange land, the customs and climate of which they knew nothing of; they went into the green forest, undertaking labor which to Europeans is most unusual, and to-day they are citizens of the New World—landlords with a right to deal as they please with their property. There is room in Victoria County for thousands of such farms as those in New Denmark.

The KINCARDINE Colony is situated in the southern part of Victoria County. It was founded in 1873 by colonists from Scotland. The land was not well chosen, a large part of it being very rough and not such as ought to have been used in an experiment such as this colony was; but the selection was in accordance with the wishes of the organizer of the colony, who is not a resident of New Brunswick. The soil, however, is very fertile. During the first year the settlers had many discouragements and disadvantages, due in part to the non-fulfilment of the promises made in the prospectus of the colony—promises which were not warranted by the agreement with the Provincial Government; but these difficulties were soon overcome and the two sections of the colony, Stonehaven and Kintore, are now in a very prosperous condition. Four years after the founding of the colony, Mr. David Burns, J. P., one of the settlers, writing to the government, said:—

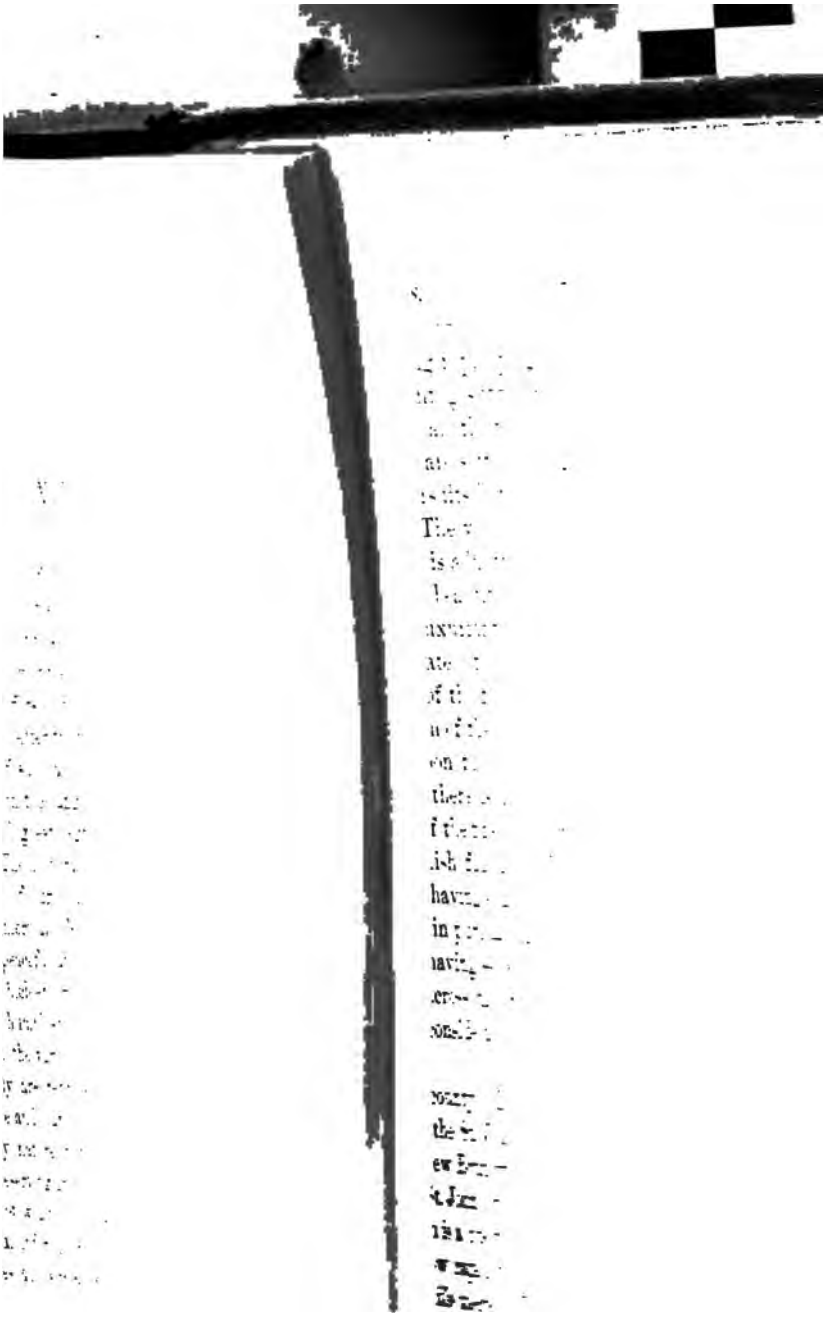
"In May, 1873, in passing along the brushed out track where the road is now built (time: morning sunrise,) our vision was limited to a few yards by the density of the forest. The only sounds then to be heard were the screaming of the owl, the snarl-



osecute agriculture extensively. The valley of the through the Madawaska country is admitted to be he most beautiful, if not the most beautiful district la. The islands are many and luxuriantly fertile, rvals are deep and highly cultivated, the hills are gly picturesque and the massing of the farm houses in little hamlets adds to the charm of the landscape. nterior of the county, that is upon the domain of · Brunswick Railway Company, there is abundant · hundreds of settlers upon land of the finest quality. id River there are several English families. The station is St. Leonards. Persons having some means disposal would find no difficulty in purchasing good re. The village of Van Buren, having several mills l starch factories, lies directly across the St. John, akes the neighborhood one of considerable import-

ndston is the Shiretown of the county. It is at the of the Madawaska river with the St. John, and is ent northern terminus of the New Brunswick Rail- t is 264 miles from the City of St. John by the river, ewhat less by rail. Edmundston is a business centre lerable importance, and will grow rapidly owing to nt erection of extensive saw mills there. There is







a ready sale. The New Brunswick railway fur-
ıutlet for any surplus.

connection will shortly be established between
ı and Quebec, when the New Brunswick railway
ıe a through line, the shortest from the interior of
open ports over Canadian territory. The value
ıate along the railway may then be reasonably
o increase considerably. Thirty-eight miles of
ɔrunswick railway lie in Madawaska and at least
les of the Quebec extension will also be in this

cipal agricultural products of Madawaska, accord-
census of 1881, were: wheat 15,891 bushels, oats
hels, buckwheat 71,541 bushels, potatoes 127,800
y 8,176 tons. The population in 1881 was 1,699.
gress of the County of Madawaska was greatly
ır many years owing to the lack of ready means
nication with the remainder of the Province.
ılty is now removed and an era of progress has
fertility of soil and great forest wealth are the
f a prosperous future that of Madawaska may be
s assured.

RESTIGOUCHE COUNTY.

ınty of Restigouche contains 2,072,710 acres, of
tle over 216,000 are granted. Only 16,566 acres
ned as under crop in 1881, and the principle farm
f that year were stated to be: wheat 10,984
ıts 77,534 bushels, buckwheat 16,930 bushels,
9,500 bushels, hay 6,566 tons; of butter 101,134
ıre made. The live stock in the county was
ı follows: horses 1,135, horned cattle 3,954, sheep

ed, by far the greater part is admirably adapted t culture. This forms a portion of what has been call Fertile Belt, and has already been described,* so t further particulars of its excellence need be given he

The county takes its name from the river, which f portion of its northern boundary and separates the Pr of New Brunswick and Quebec. The Restigouche into the Bay Chaleur. For eighteen miles above th to the town of Campbellton, the Restigouche is a wi stream, forming in fact a continuous harbor in whicl of the largest class find safe anchorage. The highe in the Restigouche rarely exceed nine feet. Fo months in the year, or in the season of open water, t affords one of the finest harbors in the country, and shipping trade has been done in the past and is n there. In attractiveness of surroundings and pict beauty this part of New Brunswick and the opposi of the river and bay is unsurpassed. It is already a summer resort, and its popularity in this respect is increasing. Excellent hotels at Dalhousie and elsewl nish accommodation to tourists, who come from tl of Canada and the United States, not a small contin presenting Great Britain. In addition to the sea batl boating, the salmon fishing serves to draw numerous This is indeed the great attraction of the place. An salmon streams of America, the Restigouche is undoub most popular. It has furnished sport to royalty, to v visitors, to the highest state officers in the American l *literati* of all nations, to many capitalists and other men, and last but not least, to hundreds of farmers and sons. Its waters not only abound in salmon, but as well, and its many branches, penetrating the he unbroken wilderness, and interlacing with the tribu

*See page 44

other streams, afford a great variety of sport and scenery.

Several new settlements have been established in Restigouche County. Balmoral is one of these. The soil is described as rich and loamy, wooded with valuable timber, and the markets are "ready and convenient." This settlement is within ten miles of Dalhousie.

Colebrooke Settlement is between Balmoral and Campbellton, and is five miles from the Intercolonial Railway. It possesses "good loamy soil, well timbered."

Sunnyside is located on the Jacquet River within six miles of the Intercolonial. The soil is somewhat gravelly but it produces good crops.

Lorne Settlement is in the same vicinity, and the soil is of much the same quality.

Mitchell Settlement is in the same parish. The soil is described as dry and loamy.

All these settlements are in a flourishing condition, and as they are surrounded by fertile Crown Lands they afford room for thousands of new settlers. In 1881 there were 12 saw mills in this county, employing 114 hands, and turning out $109,810 worth of manufactured lumber. Of timber of various kinds, 42,575 tons were cut in that year, and of fuel 1,5680 cords.

The sea fisheries afforded employment in 1881 to 235 men, the catch being returned at 336 quintals of cod, 1,120 barrels of herring, 351 barrels of mackerel, 297,800 lbs. of lobsters, besides smaller quantities of other fish. The catch of salmon for export was returned at 1,097 barrels.

The value of the growing timber in Restigouche is incalculable. Fully two million acres of its surface are covered with forest growth, consisting of maple, birch, beech, ash and other hardwoods, pine, spruce, cedar and other softwoods. Of the latter, cedar is the most abundant and will undoubtedly prove of the greatest value.

The Intercolonial Railway extends along the whole eastern part of Restigouche, and affords connections both with the interior provinces of Canada, and all parts of the Maritime Provinces. A railway has been projected to connect the Intercolonial with the New Brunswick Railway on the opposite side of the province. Such a road would pass through a splendid section of country, unsurpassed in agricultural capabilities by any part of Canada.

GLOUCESTER COUNTY.

Gloucester County has an area of 1,195,000 acres, of which about two-fifths are granted. Of the remainder about one-half, or say 300,000 acres, are adapted for immediate settlement. The soil is somewhat lighter than that of Restigouche, but it is of good quality in those sections which are recommended for settlement. At the new settlement of St. Isidore, the soil is reported as light, but good, and the average crop per acre is stated at: 30 bushels of oats, 20 bushels of wheat, 200 bushels of potatoes, or two tons of hay to the acre. The tract on which this settlement is located is quite extensive. Other new settlements are Pacquetville, Millville and Robertville. They are all doing very well. In all of these new settlements the population is almost exclusively of French extraction. Indeed, of the total population of the county in 1881, (21,614,) the greater portion were of French descent, and although there has been considerable increase in the population since the census was taken, the increase has principally consisted of people of that nationality.

Gloucester is bounded on two sides by the sea, and owing to this fact fishing forms an important industry. In 1881, there were 2,466 men in Gloucester engaged in fishing; the catch consisting of 38,475 quintals of codfish, 18,109 barrels of herring, 2,237 barrels of gaspereaux, 16,565 barrels of mackerel, 16,565 barrels of salmon, 1,349,527 pounds of

lobsters, 5,779 barrels of oysters, 8,713 gallons of fish oil, and smaller quantities of other fish.

Lumbering is also an industry of considerable importance, there being 492 men employed in the fourteen saw mills of the county; the value of the output of manufactured lumber being $304,266. Besides the logs manufactured, 84,700 cubic feet of lumber, and 60,813 cords of fuel were cut in Gloucester in 1881.

The principle agricultural products were: wheat 28,353 bushels, barley 20,977 bushels, oats 153,834 bushels, buckwheat 24,187 bushels, potatoes 717,657 bushels, hay 14,435 tons. The live stock owned in the county were: horses 2,381, horned cattle 8,843, sheep 13,719, swine 6,493. The quantity of butter made was 147,014 pounds.

There are excellent grindstone quarries in Gloucester, the output in 1881 being valued at $24,297.

The Intercolonial Railway divides Gloucester into two unequal parts, the eastern being the larger and much more valuable. Along the line of the railway the soil is not good, and a traveller would scarcely imagine from what he sees from the car windows that Gloucester is one of the most progressive counties in the province, but such is the fact.

The Shiretown of the county, Bathurst, is situated upon the railway, but its importance is due principally to its excellent harbor. The population of the parish of Bathurst in 1881 was 7,624, of whom not more than a third reside in the shiretown. Bathurst harbor is a small bay, into which the Nepisiquit, the Middle and Little rivers discharge their waters, and is itself connected with the Bay of Chaleur. "The entrance to the harbor" says M. H. Perley, "is between two low points of sand and gravel, and is about two hundred and thirty yards accross. Outside this entrance is the bar, on which, at spring tides, there is fifteen feet of water. Within the entrance, the harbor is a beautiful basin, about

for over sixty miles, and a good highway road extends that far up the stream. There is room in this magnificent river valley for thousands of people. A railway is projected up the valley.

MADAWASKA COUNTY.

The County of Madawaska contains 810,500 acres, of which about 750,000 acres are granted. The acreage returned as under crop in 1881 was 33,010 acres. This has been largely increased since, but the proportion of the cultivated to the granted land is small, for the reason that the New Brunswick Railway Company holds a large portion of the area of the county. Of the ungranted portion of Madawaska, very little is unfit for cultivation, the greater part of the soil being of the same class as that of Carleton and Victoria. The River St. John forms the southwestern boundary of Madawaska, the river front of the county being about 75 miles. This is settled continuously and very thickly, the settlements extending back from the river in some places for a distance of twelve miles. The opposite shore of the St. John is in the State of Maine and it is also thickly settled. The great majority of the people are descendants either of the Acadian French, who found their way here after the "expulsion of the Canadians" from the region around the Bay of Fundy, or of settlers from the Province of Quebec. French is the language in universal use, but very many of the people speak English fluently and most of them sufficiently well to enable them to understand strangers and to make themselves understood. They devote their attention almost exclusively to agriculture, but lumbering is extensively prosecuted in the county and many of the French people find employment in the lumber woods. Practically all of the French people in New Brunswick are adherents of the Roman Catholic Church, and they have fine churches in all their principal centres of population and

of which has never been fully explored but the existence of valuable forests there is well known.

The Caraquet River flows into Caraquet Bay, or Harbor. Pokemouche and Tracadie Rivers are wholly within Gloucester County, and flow directly into the Gulf of St. Lawrence.

At the northeastern extremity of Gloucester are two considerable islands, known as Shippegan and Miscou. They are important fishing stations. All the land available for agriculture on the latter island has been located to settlers; but there is some land suited for farming yet vacant on Shippegan.

NORTHUMBERLAND COUNTY.

Northumberland County lies south of Gloucester, bordering on the Gulf of St. Lawrence and extending into and embracing the central portion of the province. It is the largest county in New Brunswick, containing an area of 2,756,000 acres. Of this area less than one-half is granted and of the ungranted portion about half a million acres are estimated to be fit for settlement, but all estimates of this kind in reference to Northumberland must be qualified by the statement that of a large part of the county very little is known. It is claimed by some, who are well qualified to form an opinion upon the subject, that a large proportion of its unexplored area is better adapted for forestry rather that for agricultural purposes, and a suggestion has been made that this, that is the northwestern portion of the county, should be converted into a timber preserve and provincial park, where hunting could be carried on under license from the Provincial Government. This district embraces an area of almost 4000 square miles. It abounds in game; it contains rivers and lakes that have never borne a canoe; and it is open to sportsmen without any charge whatever, under certain restrictions as to close seasons. This great hunting ground is

separated from settlements by miles of unbroken forest and contains within its borders the greater part of the highlands of the province.

The population of Northumberland in 1881 was 25,169.

The most important industry in the county is lumbering, large numbers of logs, principally spruce, being cut upon the Miramichi and its tributaries. In 1881 there were 27 saw mills in the county, employing 1,543 men and producing manufactured lumber of the value of $1,443,775. In addition to this 28,619 cubic feet of birch and maple, 51,533 cubic feet of other timber, 4,947 spars and masts, 10,380 cords of tan bark, and 58,872 cords of firewood were cut in the county in that year. There is a large factory in this county, at which the tanning element in hemlock bark is extracted for export to Europe. The output of this factory in 1881 was valued at $125,000.

In the same year 626 men were engaged in fishing in this county; the catch consisted chiefly of 1,268 quintals of cod, 2,061 barrels of herring, 1,266 barrels of gaspereaux, 1,053 barrels of mackerel, 1,151 barrels of salmon, 7,500 barrels of other fish, 512,800 pounds of canned lobsters, and 3,065 barrels of oysters. The export of fresh fish, either packed in ice or frozen, from the Miramichi River and its tributaries to the United States is very large. Iced salmon are forwarded by hundreds of tons, principally to Boston and New York, in the summer season, and salmon, mackerel, bass and other fish, caught in the summer and fall, are frozen artificially and shipped to the same market in winter. The largest frozen-fish trade of the Miramichi, however, is in smelts, which is estimated to yield a larger return in money than even its great salmon fishery.

In 1881 the area of improved land in Northumberland was 53,416 acres, of which 44,934 acres were under crops, the principal products being: wheat 20,662 bushels, oats 243,966

ily a great diversity of soil. The greater portion of in this county is lighter than the best found in ıche, Victoria, Madawaska or Carleton Counties, but ry fertile in those districts which are recommended ement. The commissioner of the new settlement of le, on the line of the Intercolonial Railway, states age crop as follows: oats per acre 60 bushels, wheat els, buckwheat 75 bushels, potatoes 200 bushels, hay This settlement being upon a great railway, with arkets near at hand, is very prosperous. The k, Hazelton, Pleasant Ridge, St. Joseph, The Sugary, ıd and Breadalbane, are new and thriving settle- with good soil and convenient markets; all these nts may be greatly extended.

najority of the people of Northumberland are of Scotch and Irish extraction, but those of French are numerous, particularly in the Parish of Alnwick new settlements of Rogerville and St. Joseph.

Intercolonial Railway crosses Northumberland near tern border. A railway, called the Northern and , is in course of construction up the Miramichi to unite the town of Chatham with Fredericton, the of the Province. The road is now built from Chat- Blackville, a distance of twenty-nine miles, and for ce of forty-nine miles on the Fredericton end. The ne will be completed during the present year, [1886]. lway with its proposed connections will doubtless





A branch of the Intercolonial, 14 miles long, is also being built on the north side of the Miramichi, in the Parish of Derby, to Indiantown Brook, which is a well known anglers' resort during the month of June.

Chatham Branch Railway, nine miles long, connects the Town of Chatham with the Intercolonial, and will form the eastern end of the Northern and Western Railway already referred to.

The shiretown of Northumberland is Newcastle, situated on the north shore of the Miramichi and about 30 miles from the sea. The population of the town and parish in 1881 was 4,209, about one-half residing in the town. Its streets are lighted with gas, and it is connected by a steam ferry with the opposite side of the river, and also with the Town of Chatham by a steamer which makes five trips each way per day. There are three saw mills, a spool factory, two iron foundries, a steam tannery, two bank agencies, a newspaper office, five churches, masonic and temperance halls, a skating and curling rink and other industries and institutions denoting an enterprising and progressive community. Newcastle is an important station on the main line to the Intercolonial Railway, a branch of which runs to a deep water wharf on the river front of the town.

Chatham, the second shipping port in the province, and the chief business centre of the North Shore of the province, is on the south side of the Miramichi River, and about five miles nearer the sea than Newcastle is. The population of the parish in 1881 was 5,762, of whom about 4,500 reside in the town. Its streets are lighted with gas. It has three large saw mills, two foundries, machine works, door and sash factories and two newspaper offices. Chatham is the residence of a Roman Catholic Bishop, and the Convent and Hospital of Hotel Dieu together with valuable educational institutions are maintained by this denomiation. There are

the people.

am is a port of registry for ships, and on January 5, there were 169 vessels with a tonnage of 15,661 d here. The Miramichi Steam Navigation Com- ganized in 1884, has constructed fast steamers to he river above and below Chatham in addition to iver steam service now existing. Steam ferries run Chatham and the opposite shore of the river.

astown is a village of considerable importance on h side of the river, about a mile above Chatham. It provided with railway connection with the Inter-

n is a large village on the south of the Miramichi vo miles above Newcastle. There are several large d a large steam tannery here.

ton, Black Brook, Blackville, Doaktown, and Boies- e important centres of business and population.

ls drawing 23 feet of water load at Chatham and le, and the anchorage in the river is good almost re. Between two and three hundred large steam ng vessels load at Miramichi each season, the trans- shipments ranging from 110,000,000 to 150,000,000 al feet of lumber, being almost two-thirds as much of St. John and nearly double those of the whole of Nova Scotia.

Miramichi is a stream of considerable repute among



of the St. John. The winter bass fishing of the Northwest Miramichi is a source of great profit to the people on its banks.

In many respects, and particularly in view of the early completion of the Northern and Western Railway, the County of Northumberland presents superior inducements to settlers. The domestic market for produce of all kind



SALMON FISHING ON THE MIRAMICHI.

is large, owing to the requirements of the lumber trade, a the facilities for export are all that can be desired.

In 1881, the amount of capital invested in industral est lishments in Northumberland was $874,547, employing 2,! hands, to whom $407,192 was paid in wages, the valu articles produced being $2,052,781.



two-fifths are granted; of the remainder 300,000 acres imated to be fit for cultivation. Much of the soil of s well adapted to farming and the several new settle- lately established in the county are prosperous. The tion and the settlement of the county are increasing r. In 1881 the population was 22,618, nearly all of were of French extraction.

n most other counties of New Brunswick lumbering ry important industry in Kent. In 1881 there were mills in operation, employing 459 men and producing ctured lumber worth $225,878. In addition 1,471 et of pine, 73,284 cubic feet of tamarac, and 77,951 et of other timber, 1,334 masts and spars, 5,657 cords lock and 56,510 cords of firewood were cut in this A very large area in Kent County is covered with of which hemlock forms a large proportion.

fisheries furnished employment in 1881 to 932 men, th of fish being: 1,307 quintals of codfish, 1,502 bar- herrings, 1,311 barrels of gaspereaux, 3,672 barrels of rel, 252 barrels of salmon, 1,591,071 pounds of canned s, 1,872 barrels of oysters and over 5,000 barrels of lsh. Kent, it will be observed, takes the lead in the s of canning lobsters. Very rapid strides have been in this industry since 1881, and vast quantities of smelt, eels, bass and salmon, are now exported. By ie census 83,642 acres of land are returned as improv- 64,498 were stated to be in crop, the principal crops

of horned cattle 15,062, of sheep 19,034, of swine 5,399. The production of butter was 217,539 pounds.

The principal new settlements in Kent are Rhomboid, Girouard, Acadieville, Colebrookedale and Adamsville. While some of the soil in these settlements is not of what is commonly regarded as the best quality, they are all progressing in a very satisfactory manner, thus demonstrating the truth of Professor Hind's observation, that much land in the province not at present esteemed for agriculture will become valuable on cultivation.

The shiretown of Kent is Richibucto, a seaport at the mouth of the Richibucto River. Population including the parish 4,079. The harbor is good and considerable quantities of lumber are shipped from it every year. An important article of export is canned lobsters, which were shipped to the value of $711,142 in 1882. On December 31st, 1884, thirteen vessels with a tonnage of 4,126 tons were registered at this port. Buctouche is twenty miles south of Richibucto. It also has a good harbor. In the rear of Buctouche there is much excellent land, now pretty well occupied by thrifty settlements.

Cocagne is a good harbor nine miles south of Buctouche. There is good farming country in the interior at this point.

North of Richibucto are the Kouchibouquac and other streams, with good harbors at their mouths and fairly good land in the interior. The settlement of Acadieville is on the Kouchibouquac, and there are considerable areas of very good land yet vacant here.

The Intercolonial Railway extends for fifty miles through Kent County, and the Kent Northern Railway, twenty-seven miles in length, connects Richibucto with the through line. It has recently been extended to St. Louis in the northern part of the county, and this will both add to the importance of the line and assist in developing the country.

A line of railway is also projected and will be constructed at a very early day to connect Buctouche in this county with Moncton, Westmorland County.

Although the great lumber forests, which built up the towns of Kent County in the first place, have been largely cut away, so that in the future the lumbering interest is never likely to assume as large proportions as it possessed in the past, yet the agricultural developement of the county and the utilization of its valuable fisheries serve to make the county progressive and to assure it a properous future.

WESTMORLAND COUNTY.

The County of Westmorland forms the southeastern portion of New Brunswick. It is washed by Northumberland Straits on the one side, and by the Bay of Fundy on the other, and Cumberland County, Nova Scotia, bounds it on the southeast. The area of Westmorland is 887,300 acres, of which by far the greater portion is granted, but there is estimated to remain 100,000 acres, ungranted and adapted for agriculture.

The population of Westmorland in 1881, was 37,719.

Although agriculture forms by far the principal occupation of the people of this county, there were seventy-five saw mills, employing 525 hands, in 1881, and producing manufactured lumber worth $291,000. The cut of other lumber in the county during the same year consisted of 5,000 cubic feet of pine, and smaller quantities of tamarac, birch and maple, 1,691 cords of hemlock bark, and 65,334 cords of firewood.

The fisheries employed in that year 460 men; the catch consisting of 9,551 barrels of herring, 639 barrels of mackerel, 719 barrels of shad, 532,184 pounds of lobsters (canned), and about 1,500 barrels of other fish.

The area of improved land was stated at 171,090 acres, of which 111,523 were under crop, the principal produce being :

wheat 81,495 bushels, barley 27,453 bushels, oats 310,574 bushels, buckwheat 156,389 bushels, potatoes 1,005,802 bushels, turnips and other roots 188,000 bushels, hay 67,957 tons. There were 7,290 horses, 28,671 horned cattle, 29,992 sheep, and 5,407 swine. The product of butter was 848,715 lbs.

Cattle raising has, for many years, formed an important industry in Westmorland, large numbers of animals being sold from this county in the markets of Halifax, St. John and Miramichi. Recently large shipments of cattle have been made from this section to Great Britain; this has caused increased attention to be paid to this branch of the farmer's business, so that although it has been an important industry in the past it is still a growing industry. The exported cattle being shipped principally from Halifax do not appear in the returns of the export of cattle from New Brunswick.

Westmorland contains very valuable deposits of freestone of light color and easily worked. The output in 1881 was 113,876 cubic feet. The reputation of these freestones extends all over Canada and the Eastern States, large shipments being made to New York and Boston. The quarries, which are very extensive, will continue to remain one of the staple industries of the county, as the trade is capable of very great development. There are large deposits of stone suitable for grindstones in Westmorland which are worked to a limited extent. In 1881 manufactured grindstones to the value of $6,000 were produced in the county.

A large number of hands are now engaged in a Copper Mine that has been opened between Dorchester and Sackville, and the company owning it expect to employ a still larger number of men next season.

Shipbuilding is prosecuted to some extent, five ships with an aggregate tonnage of 158,000 tons, having been built in this county in 1881. There were 18 tanneries in operation

in the county in that year, the product of manufactured leather being estimated at $73,000.

In 1881 the amount of capital invested in Westmorland was stated to be $1,011,833, giving employment to 2,516 hands, to whom $537,143 were paid in wages, the value of articles produced being $2,900,735. There has since been a considerable increase in these amounts.

An interesting feature of the geology of Westmorland County is the existence of deposits of Albertite, which may yet be found in quantities sufficently large to render it profitable to work them, and the numerous indications of petroleum. More particular reference will be made to these matters in the chapter dealing with economic minerals.

The character of soil in Westmorland County is varied in quality and much of the upland may be ranked as first-class. A very fine tract, not all taken up, is found in the parish of Salisbury, that is in the northwest angle of the county and adjoining Kings County. This locality is not far from the Intercolonial Railway, and the proposed Short Line Railway to connect Halifax with Montreal and Quebec will pass through it. The important town of Moncton is near at hand, and the St. John and Halifax market is available for the sale of produce. The farmers, already located in this district, are among the most thrifty and intelligent people in the province, and perhaps there is no place in New Brunswick where a settler could locate himself more satisfactorily than here. A reference has already been made in describing Kings County to the western portion of this same district.

The most marked feature of this county is its great marshes, which have been described at length in another chapter.*

The Intercolonial Railway intersects Westmorland from

* See page 49.



It will be 37 miles in length and will pass through an lent section of country.

The shiretown of Westmorland is Dorchester, popu including the parish, 6,582, population of the village Here also is located the Dominion Penitentiary f Maritime Provinces.

Moncton is the largest town in the county, its popu in 1881 was 5,032 and is now probably over 6,0 derives its importance, principally, from the fact th the headquarters of the Intercolonial Railway, but its are energetic and have established numerous important facturing establishments. Among them are a sugar r a cotton mill, a knitting factory, machine shops and factory. It is an incorporated town and is supplie water and gas. Moncton is situated upon the Peti River and was a place of growing importance bef construction of the railway. It is at the head of nav of the Petitcodiac, and the tide rises here on ordinar sions 48 feet, the spring tides being 57 feet high. T rushes up the Petitcodiac with great force, a tidal wa 5 feet high, called the Bore, preceding it. Monct continue to grow in importance and its neighborhoo be a good locality for settlers from England with ca locate themselves in.

Sackville, population 2,000, is a business centre of erable importance, and is the seat of the Methodist

education. Sackville has two iron foundries and a shoe factory, which find a market for their products all over the Maritime Provinces. There is also a furniture factory here which is developing a large trade.

On the Strait of Northumberland, and at the terminus of a branch of the Intercolonial Railway, is the town of Shediac, population 700, situated upon a good harbor. There are several other good harbors on the Straits, on the opposite side of which is Prince Edward Island.

In all respects Westmorland is a very prosperous county. It is second in point of population among the counties in the province and at least third in the amount of capital invested in manufacturing industries. Its people are enterprising, and if the mineral resources, of which there are good indications, prove to be worthy of development, the future of the county will be marked by exceptional prosperity.

ALBERT COUNTY.

The County of Albert is situated between the Petitcodiac River and the Bay of Fundy. Its area is 435,000 acres, of which five-sixths are granted; of the remainder about 40,000 acres are well adapted for agriculture.

The soil is generally good, much of the highland being excellent and the marshes being very extensive. Its mineral wealth is rich and varied. Its climate is rendered humid by the proximity of the Bay of Fundy, and this adapts the county in an especial degree to cattle and sheep raising.

There are quite extensive tracts where new settlers can establish themselves, and farmers with capital, desiring to purchase improved farms, can find many excellent opportunities for investment.

The population of the county in 1881 was 12,329, nearly all of English descent.

Lumbering and shipbuilding occupy the attention of a considerable proportion of the people of Albert. In 1881, there were 77 saw mills in operation and the output of manufactured lumber was valued at $218,315. Of other lumber there were produced 200,000 cubic feet of timber and 21,406 cords of firewood. Shipbuilding was at somewhat of a low ebb in 1881, only three vessels, worth in all $53,150, having been built in the county. The bay shore produces a spruce particularly adapted for shipbuilding. The principal shipyards in Albert are at Hopewell, Harvey and Alma.

In 1881 there were 61,798 acres improved land in this county, of which 38,723 were under crop, the principal products being: wheat 21,487 bushels, oats 98,412 bushels, buckwheat 76,182 bushels, potatoes 317,399 bushels, hay 27,640 tons. There were 2,495 horses, 9,933 horned cattle, 10,165 sheep, 1,615 swine; the product of butter was stated at 365,732 pounds.

Quite an extensive business is now carried on in raising and feeding cattle for the English and Provincial markets. One farm in Harvey averages about seven hundred head per year, of which about one-third goes to the English markets, being shipped at Halifax. The sum realized from these cattle is over $40,000. A number of other farmers are also engaged in this business in the different parishes, but perhaps not so extensively.

The mineral resources of Albert are yet not fully developed, the only mines worked being of coal, gypsum and freestone. The output of coal in 1881 was 18,367 tons, of gypsum 435 tons, of freestone 81,948 cubic feet. This output is capable of almost unlimited expansion, but lack of capital restricts operations. Many excellent opportunities for profitable investment can be found in the mineral deposits of Albert County. The freestone quarries for the product of which there is a good market in the United States are especially

commended. $4 will pay for quarrying and shipping a ton of this stone, which will bring $14 a ton in the United States market, thus allowing a large margin for freight and other charges.

Along the lower Petitcodiac River and for some distance on the Bay Shore the marshes extend, there being only a small quantity left unreclaimed. The land rises gradually and much of the country may be described as a slightly elevated plateau. Caledonia and Baltimore are thriving settlements in the interior where the land is good and farming is successfully carried on. South of Baltimore is a large section of land of excellent quality, known as New Ireland. Here was once a large settlement but it is now comparatively deserted. It was begun by a colony of city laborers, ignorant of farming, who neglected their farms, whenever an opportunity offered to earn a day's wages at any employment. They cleared large areas of land, cropping the portion cleared for a few years and then abandoning them for new clearings. They kept no stock and these abandoned clearings were used as pastures by their lowland neighbors. When the lumber was so cut away that labor became scarce most of the settlers deserted their farms, but there are one or two conspicious exceptions to this rule. In New Ireland there is room for quiet an extensive settlement, or for the establishment of several large sheep farms. For some further particulars as to Albert County see page 54.

CHAPTER VIII.

THE RIVER SYSTEM.

The largest river in New Brunswick is the St. Jo
rises in the northern part of the State of Maine, a
northward through that state for 150 miles, receivi
eral large tributaries. On this part of the St. John
sive logging operations are carried on, the lumbe
floated to the mills at the mouth of the river, wh
manufactured, principally for the United States mar
150 miles from its source the St. John receives the w
the St. Francis, a very considerable tributary having
in Quebec; and from this point it forms, for 73 m
International Boundary between the United States a
ada, New Brunswick being on the northern shor
river and the State of Maine on the southern sho
St. John then passes into the Province of New Br
At 225 miles from the sea occur the Grand Falls. T
now of considerable magnitude, here plunges in a
75 feet high, into a gorge a mile in length, formed
pendicular walls of rock, in some places 200 feet i
The scenery is remarkably grand; and the local
popular place of resort for tourists. Below the
navigation of the river is uninterrupted to the se
navigable above the falls by light draught steame



SUSPENSION BRIDGE AT ST. JOHN, N. B.

distance of 80 miles, and by smaller craft for r
entire length. The tide flows up the river a con
distance, and large steamers and sea-going schoone
tons ascend as far as Fredericton, 85 miles, at all se
open water. In the lower part of its course, the St.
widens out into magnificient reaches, and a few miles
the sea the soundings on the Admiralty Charts show ove
fathoms of depth. The St. John enters the sea, or r
properly, the small land locked bay which forms the ha
of St. John, through a rocky gorge, in which at low w
there is a fall outward and at high water a fall inward.
a certain stage of the tide the water is perfectly sm
and vessels pass through in perfect safety.*

The St. John is not subject to sudden freshets or fl
the large lakes acting as reservoirs, and the forests in v
it and all its tributaries have their sources, retainin
water, caused by the melting of the snow in the spri
well as that which descends in the heaviest summer
falls, until it gradually flows away. This feature give
inhabitants of the river valley perfect immunity from
den floods, such as are becoming of annual occurrence i
rivers of the Western States, whereby not only are
thousands of dollars' worth of property destroyed, but
lives are lost. The absence of sudden and destructive
is characteristic of all the rivers of New Brunswick.

The spring freshets are gradual in their rise and fal
their highest limit is well known. They usually cove
low islands and intervals, and on receding leave a sed
which renews the fertility of the soil, so that many
meadows, which have yielded luxuriant crops of hay
century, show no sign of exhaustion.

*The highway Suspension Bridge across the St. John, shown in the engraving on
ceding page has a span of 640 feet, and is 70 feet above high tide, as shown in the e
It is hung on 10 cables supported by 4 towers of solid masonry 53 feet high and
570 miles of wire. It was built in 1852 at a cost of $80,000. A railway bridge of
structed on the Cantilever principle has been built over the river immediately
highway bridge, since the view was taken, from which this engraving was mad
description of this bridge see next chapter.

From the sea to the confluence of the St. Francis with the main river, a distance of 300 miles, the St. John flows through an unbroken succession of cultivated farms extending in many places back in range after range, for more than ten miles.

THE LARGEST TRIBUTARIES of the St. John are the Aroostook and the Tobique, the confluences of which, with the main river, are respectively 200 and 204 miles from the sea. The Aroostook flows from the west, and is nearly all in the State of Maine. The country drained by it is of such great fertility that it is called "the Garden of New England."

The Tobique river drains a region of equal promise in New Brunswick. It rises in the central part of the province, and its several branches unite at what is known as Nictau, or the Forks. Thence to the St. John the distance is 60 miles, and in this part of its course the Tobique receives several large tributaries. Thriving settlements border the Tobique from its mouth to the Forks, but in the region through which it flows are many thousands of acres of soil of the highest fertility, yet unoccupied by settlers. The Tobique is navigable by light draught boats, and is an important highway for the conveyance of supplies to the lumber camps of the interior.*

The Madawaska is an important tributary of the St. John. It is the outlet of Lake Temicouata, which in its turn receives the waters of numerous lakes and rivers. The Madawaska is navigable by light draught steamers. It enters the St. John at a point 262 miles from the sea.

Other considerable tributaries of the St. John are the St. Francis, Green River, Grand River and Salmon River, which join the main river in the upper part of its course in New Brunswick; the Nashwaak, the Oromocto, the Jemseg, the Washdemoak and the Kennebeccasis, which are on the lower part of its course. The Jemseg is the outlet of Grand Lake, a fine navigable sheet of water, thirty miles in length, with

*See map on page 85.



an average width of ten miles. The name Kennebeccasis is applied as well to a magnificient sheet of water, extending like a long, narrow bay eastward from the St. John, a few miles from its mouth, as to the tributary stream flowing into it. Bellisle Bay is a large arm of the St. John, extending also to the eastward, and navigable by large vessels.

THE MIRAMICHI is the second river in importance in New Brunswick. It empties into the Gulf of St. Lawrence. It is wholly within the province. The entrance to the river is perfectly safe, and large ships and steamers are able to ascend the river for miles, there being ample depth of water for the largest vessels. At a short distance from the sea the Miramichi divides into two branches and these again are sub-divided into many more, so that the Miramichi is more properly a system of rivers than a single river. The principal of these branches is called the Southwest Miramichi, the head waters of which intertwine with those of several tributaries of the St. John. The country is settled more or less thickly along the Southwest Miramichi for eighty miles from the sea; but large areas of very excellent land remain unoccupied. The Northern and Western Railway, to connect the towns at the mouth of the Miramichi with the Capital of the Province, is in course of construction up the valley of the Southwest.

The Northwest Miramichi, the Little Southwest, the Renous, Cain's River, Bartholemew River and other large tributaries intersect the central part of the province in all directions. They are all navigable by boats of light draught, and settlements have made some progress along most of them. All the rivers forming the Miramichi system flow through a country abounding in valuable forests, and extensive lumbering operations are carried on upon their head waters, the logs being floated down to the mills at the estuary where are situated the thriving towns of Newcastle and

uth and is navigable by large vessels for 18 miles from
y. It has many large tributaries, and these with the
stream are esteemed the best waters for salmon fish-
the eastern part of America. The main Restigouche
two hundred miles in length. It drains a country
ry well known, except as to the fertility of a large
n of it and the valuable timber, both hard and soft
to be found all over it; the area embraced in what
e called the Restigouche basin in New Brunswick,
an area of over 4,000 square miles. The towns
lhousie and Campbelltown are situated upon the
part of the Restigouche, and there are milling estab-
nts there and a considerable trade is done. Settlement
ly made its way a short distance up the Restigouche
r. The Bay of Chaleur, into which the Restigouche
is almost 90 miles in length and from ten to twenty
wide. It is almost land-locked. Along its shores are
excellent harbors, and throughout the whole bay there
ther reef, bar, rock nor any impediment to navigation.
NEPISIQUIT, a very considerable stream, noted princi-
for its salmon fishing, but draining a valuable timber
y, also flows into the Bay Chaleur. The town of
rst is situated at its mouth on an excellent harbor. The
t through which the Nepisiquit flows is almost all unset-

THE RICHIBUCTO is an important river flowing into the Gulf of St. Lawrence. At its mouth is a good harbor on which is situated the town of the same name. The Richibucto is navigable for about fifteen miles above the harbor. For the greater part of its course the Richibucto flows through unsettled land, much of which is fit for farming. Very many other rivers, some of them of considerable importance, flow into the Gulf of St. Lawrence.

THE PETITCODIAC flows into Shepody Bay, an arm of the Bay of Fundy, near its eastern extremity. It is navigable for twenty-five miles by vessels of the largest size. Schooners of from 60 to 100 tons can ascend it as far as the town of Moncton. The river is about 100 miles long, and its course is almost entirely through a thickly settled country.

The Magaguadavic, the Digedequash and the Lepreaux are rivers of some importance, flowing into the Bay of Fundy.

THE ST. CROIX is a large river, receiving the water of two chains of lakes, one of them being in the State of Maine, and the other with the river forming the International Boundary. It is navigable to St. Stephen, situated at the head of the tide, or sixteen miles from the mouth of the river. The harbor into which the St. Croix empties, called St. Andrews, from the town of that name, is justly considered one of the finest in North America. Its area is about 100 square miles, and it is protected from the sea by the West Isles, which extend in a chain across its entrance. The anchorage is good, and the harbor is practically free from obstruction by ice at all seasons.

It will thus be seen that New Brunswick is a remarkably well watered country, and that the rivers are large enough to form an important feature of internal communication. Every section has its lakes and rivers. Indeed it is claimed that no country of equal area can claim so complete a river system.

CHAPTER IX.

MEANS OF COMMUNICATION.

HIGHWAYS.

For purposes of internal and external communication New Brunswick is exceedingly well provided. The highway system is excellent, and the roads are kept generally in good repair with substantial bridges over the streams. Every settled locality has either a great road or one or more by-roads running through it, and there is not a toll-gate on either turnpike or bridge from one end of the province to the other.

The roads are maintained by grants from the Legislature and by what is known as statute labor. The money grants amount to about $170,000 a year, the statute labor, nominally, to twice as much. The money grants are expended in part by officers appointed by the government and in part by officers appointed by the municipalities. The statute labor is a tax payable in work upon the roads in the district in which the individual resides. Every male inhabitant over 21 years of age and under 60 must do three days' work upon the roads, with an additional amount apportioned on the property of the individual. An average tax would be five days' work. This may be commuted by a payment of 50 cents in lieu of each days' work. There is also a tax of half a cent an acre upon unimproved wilderness land in certain cases. This is applied to the making of roads.



maintain communication between the province and G
Britain.

Regular lines of steamers ply between St. John an
Stephen, St. Andrews, Eastport, Portland, Boston, Yarm
Digby, and Annapolis. Fine steamers go up the St. Jol
Fredericton, and smaller steamers run to Woodstock. (
large steamers run regularly to the Grand Lake. Th
steam communication between St. Stephen and St. And
between New Brunswick and Prince Edward Island
tween the towns on the Lower Miramichi and bet
several points on the Bay Chaleur. In addition to
lines of steamers a large fleet of coasters attends to
business, and gives cheap communication with the prin
ports of the United States. The competition betwee
carriers by land and by water insures cheap transport

RAILWAYS.

In proportion to its population there are more mi
railway in New Brunswick than in any other sta
province in America. The total number of miles
structed and in operation at present is 1,027; the
projected and in course of construction are in all abou
miles, so that within a year there will be in operati
New Brunswick about 1,300 miles of railway, or on
to every 250 of the inhabitants. In Great Britain th
about one mile of railway to every 2,500 of the inhab

tained in the Act of Union between the provinces, to give connection by rail over British territory between the Maritime and Interior Provinces of Canada. The Intercolonial extends from Quebec to Halifax and St. John, its total length with its branches being 845 miles, of which 354 miles are in New Brunswick. It extends from St. John to the Straits of Northumberland, through the Counties of St. John, Kings and Westmorland, and from the Nova Scotia boundary to the Quebec boundary, the whole length of the province from north to south, through the Counties of Westmorland, Kent, Northumberland, Gloucester and Restigouche. From St. John to Quebec, over the Intercolonial, is 779 miles, from St. John to Halifax 276. It is the great channel of trade between the interior and the Maritime Provinces, and in New Brunswick it affords a most valuable outlet for the produce of all the counties through which it passes.

THE NEW BRUNSWICK RAILWAY

was originally a line from Gibson, opposite Fredericton, to Edmundston, in Madawaska County, but the company owning it have absorbed several other lines in western New Brunswick and built several branches, including one into Maine, so that it now operates 443 miles of railway. The line begins at St. John, where it connects with the Intercolonial, and extends to St. Andrews, St. Stephen, Fredericton, Woodstock, Grand Falls and Edmundston, in New Brunswick, and Fort Fairfield, Houlton and Presque Isle, in Maine. It has a line from Woodstock to Fredericton on the eastern side of the St. John. It passes through St. John, Charlotte, Kings, Queens, Sunbury, York, Carleton and Madawaska Counties, and will probably be extended to Quebec. At Vanceboro it connects with the United States railway system, and affords the great agricultural counties of New Brunswick the best of facilities for the shipment of produce



Stephen by way of the coast through St. John and Ch
Counties. It passes through the thriving town
George, where are very extensive quarries of red
and at other points on its route the outlets of severa
apply fine motive power.

THE ALBERT RAILWAY

begins at Salisbury Station, on the Intercolonial R
and extends to Hopewell, in Albert County, a distanc
miles. A branch three miles long connects the t
Harvey with this railway. The line is being exte
Alma in the same county.

THE ELGIN RAILWAY

extends from Petitcodiac on the Intercolonial to
Albert County, a distance of 14 miles.

THE KENT NORTHERN

extends from Richibucto, the shiretown and princip
of Kent County, to the Intercolonial. It is 27 mil
with a branch 7 miles long to St. Louis in the same

THE CHATHAM BRANCH

connects the town and port of Chatham with the I
lonial. It will form a part of the Northern and W
Railway now in course of construction. It is nin
long.

THE DALHOUSIE BRANCH

St. Martins on the Bay of Fundy in the County of St. John. It is 30 miles long.

THE HAVELOCK, ELGIN AND PETITCODIAC RAILWAY,

12 miles long, connects the excellent farming district in Havelock, Kings County, with the Intercolonial.

THE ST. JOHN BRIDGE AND RAILWAY,

two miles long, connecting the Intercolonial Railway with the New Brunswick Railway was built in 1885. The Cantilever Bridge across the St. John is built of steel. It consists of a central span 477 feet long, and two shore spans 143½ and 191 feet respectively in length. It rests upon granite piers, that on the east being 96 feet high and that on the west being 50 feet high. This bridge and railway, connecting the railway system of the province, is expected to greatly develope the business of the Northern Counties, which are thus given unbroken rail connection with all points on the Continent.

THE CARAQUET RAILWAY

from Bathurst on the Intercolonial to the harbor of Shippegan in Gloucester County. It is 66 miles long.

The railways in course of construction are:

THE NORTHERN AND WESTERN RAILWAY

from Gibson opposite Fredericton to the Intercolonial at Chatham Junction. It will be 110 miles long. Fifty miles are now constructed and in operation. The whole road will be in operation by the spring of 1886. It passes across the centre of the province through the counties of York and Northumberland.

THE NEW BRUNSWICK AND PRINCE EDWARD ISLAND RAILWAY,

from Sackville on the Intercolonial to Cape Tormentine on Northumberland Straits. It is upwards of 30 miles long and will be completed in 1886.



or a railway across New Brunswick, giving the shorte
sible route from Halifax to the West. There is
Dominion subsidy for this road.

THE CENTRAL RAILWAY

from Gibson opposite Fredericton through the Que
Sunbury coal region to the head of Grand Lake, and
to either Sussex or Norton on the Intercolonial Rail
is 90 miles long, the route has been surveyed and a c
formed to construct it.

THE NEW BRUNSWICK RAILWAY EXTENSION

from Edmundston to the Intercolonial at Riviere du
Riviere Ouelle.

It will be seen from this summary that New Br
is exceedingly well provided for in the matter of
communication and that the points wherein the sys
all deficient are likely soon to be supplied. A s
any part of the province will have the advantage
highways giving him access either to railways
communication and in most cases to both.

THE MAIL SERVICE.

There is an efficient mail service to all parts
Brunswick. The postage on letters is three cents

Following is a list of the telegraph offices

merly Hopewell,)	Dorchester,
	Edmundston,
	Edwards,
	Escuminac,
	Fairville,
ver,	Ferris,
	Flagg's Cove,
	Florenceville,
	Fredericton,
ation,	Fredericton Junction,
,	Gibson,
	Grand Anse
ok,	Grand Falls,
	Grand Manan,
	Hampton,
s,	Hartland,
	Harvey, York Co.,
	Harvey, Albert Co.
c,	Hillsboro,
,	Hoyt,
	Indiantown,
	Jacquet River,
n,	Kent Junction,
n Station,	Keswick,
,	Kilburn, (or Muniac,)
	Kingston, Kent Co.
Station,	Kouchibouguac,
ntine,	Marysville,
	McAdam,
	Magaguadavic,
	Memramcook,
nction,	Millville,
ucester Co.	Moncton,
n,	Musquash,
,	Muniac,
	Nauwidgewauk,
	Newcastle,
tation,	New Mills,
	Newburg Junction,
on,	Norton,

Painsec Junction,	St. John,
Penobsqis,	St. Leonard's,
Perth,	St. Louis,
Petitcodiac,	St. Peter's,
Petit Rocher,	St. Stephen,
Point du Chene,	Salisbury,
Point Lepreau,	Seal Cove,
Pokemouche,	Shediac,
Portland, (Indiantown,)	Shippegan,
Red Pine,	Sussex,
Richibucto,	Tracadie,
Rockland,	Watt Junction,
Rogerville,	Welchpool,
Rothesay,	Weldford,
Sackville,	Wellsford,
St. Andrews,	Westfield,
St. George,	Woodstock,

Woodward's Cove.

EXPRESS COMPANIES

for the carriage of packages and valuables are in o on all the principal lines of railway.

TELEGRAPHIC MONEY TRANSFERS

may be made between the chief towns.

THE MONEY ORDER SYSTEM

is connected with the Post Office, and the usual reg exist for registration, the carrying of parcels by n the like.

CHAPTER X.

LAND TENTURE AND TRANSFER AND OPPORTUNITIES FOR INVESTMENT.

Nearly all land in New Brunswick, outside the cities, is held by its occupiers in fee simple. Very few farms are rented. The grants from the Crown convey all the lumber growing upon the land to the owner of the soil; also the minerals of economic value, reserving to the Crown a right of royalty. When lands are granted the grant is registered in the Office of the Provincial Secretary, a duplicate copy is kept in the Crown Land Office and the grant itself is given to the grantee, who may, if he chooses to do so, record it in the Office of the Registrar of Deeds and Wills in the county where the land lies; this, however, is rarely done. There is no charge for grants or for the recording of them in the Provincial Secretary's office, and the maps and records of the Crown Land and Provincial Secretary's office are open to inspection free of charge. All conveyances of land or leases for a term of three years and upwards, made between individuals, must be registered by recording the instrument at full length in the Office of Registrar of Deeds and Wills in the county where the land is situated. A small fee is charged for examining the records, and the fee for recording a common deed is about $1.50, varying according to the length of the document. In the great majority of cases titles are unquestionable and conveyancing is comparatively

inexpensive. No one in purchasing property in New Brunswick need take the least risk as to title. An idea having gone abroad that land titles in Canada were insecure, the subject was dealt with in the *Gleaner*, a newspaper published in Fredericton, and its observations on the point were as follows:—

[From the Gleaner of September 4th, 1884.]

"The *Canadian Gazette* discusses the question of land transfer in Canada, which it thinks is susceptible of great improvement. Our contemporary says a purchaser or mortgagee must accept some risk in the matter of title. In making its observations the *Gazette* falls into a very common error of taking a part of Canada for the whole, and adversely criticising the whole Dominion for reasons only applicable to a part of it. In the Province of New Brunswick there is no need of a purchaser or mortgagee running any risk in the matter of title unless he wishes to do so; and the risks that he might have to run in any case are only such as would arise from defective conveyances or defective possession. In the vast majority of cases the titles to land are plain and readily traced. The possession of title deeds, while it is convenient, is not necessary to the making of a complete title, as if all a man's deeds and mortgages were burned, the Record Office will furnish all the documentary proof of title needed in any case. Only a small proportion of the ejectment cases tried in our Courts involve questions of documentary title; for the reason that unless a man wilfully takes a bad title he need never have to rely upon an imperfect one so far as documentary evidence is concerned. The *Gazette* says that in very few cases will the examining solicitor give a certificate that the title is good. So far as New Brunswick is concerned a qualified solicitor who examines the records for an intending purchaser or investor, will have, in the majority of cases, no difficulty in giving his client such opinion as to the title as will relieve him of all risk. We are unable to say how far the *Gazette's* remarks apply to some of the other provinces, but we think it ought to correct them so far as relates to New Brunswick. A statement that there

is always risk in buying or loaning money or land in New Brunswick is calculated to do harm, particularly at the present time, when numerous enquiries are being made as to the opportunities offered by the province to persons of limited means who wish to buy a home and invest their capital in mortgages on real estate.

"We brought the portion of the *Gazette's* article above referred to under the notice of Chief Justice Allen and Judge Wetmore, and they both authorized the use of their names to give authority to a denial of its applicability to New Brunswick. The Chief Justice said he could not imagine a more simple and certain means of preserving the titles to land than was in force in New Brunswick, a system which had received a most favorable notice from Sir James Carter, formerly Chief Justice of the province, and was found most effective after many years of trial. Judge Wetmore said that it was possible, under our system of registry, to find out a title "to the very letter." We hope the *Gazette* will give prominence to this correction of its observations, in making which it has been too sweeping. The fact cannot be too widely made known that if persons wish to purchase farms or loan money on real estate in New Brunswick they can do so without any fear as regards title."

The *Gazette* subsequently explained that its observations did not apply to New Brunswick.

A widow is entitled to her dower in real estate in New Brunswick, the same as in England. Real estate of intestates descends to children in equal shares, tenancy in tail having been abolished by law.

Personal property of intestates, after payment of any debts of the deceased, is divided among the children, or next of kin in equal shares, the widow receiving one-third to her own use absolutely.

Provision is made for the registry of Mortgage Bills of Sale on personal property.

OPPORTUNITIES FOR INVESTMENT.

Persons having capital to invest can place it in the Gov-



open market at any time; the rates of interest range
to six per cent, and these bonds usually command a
If a higher rate of interest is desired there is little
in placing loans on good bond and mortgage securi
seven to nine per cent. In this connection the
extract from a New Brunswick paper will be of i

"There are in England quite a large number of perso
capital who find it a constant struggle to make both
from year to year. They are used to living in a certain
their efforts to keep up to it make their lives a const
For such persons New Brunswick offers the best in
Take the case of a man with £5,000, not a very large
England, and out of which the owner would be a lucky
could realize an income of £200. He comes to New
with his money. With £1,000 he can buy himself a
one on which, if he knows anything of practical agri
can make a very comfortable living. He expends £500
stock and farming utensils and in defraying the cost of
can of residence. He will have £3,500 of his capital lef
least invest on the best of real estate security so as to y
seven per cent. over and above all charges, on an incom
or say $1,200. Now contrast the two positions. In E
life is a struggle, he can never hope to become a landed
and he will be constantly brought face to face with the
What shall I do with my boys? Here he may have

"We offer in New Brunswick to such people what they value most—a settled, orderly community, with the best educational advantages, and a degree of social culture quite equal to what they have been accustomed to. We offer them a glorious climate, where there is life and health in all the four winds of Heaven. We offer them land of the highest fertility, and ready markets for all kinds of produce."

For business men seeking investment the opportunities offered by New Brunswick are many and varied. There are mines of iron, coal, copper, silver, manganese, graphite and antimony, only requiring capital to develope them; there are vast quarries of the finest granite and freestone upon the shores of the Bay of Fundy and the Gulf of St. Lawrence; there is a supply of timber of various kinds which is practically inexhaustible and from which many articles could be manufactured, for which there is a ready sale in foreign markets. Lack of capital alone prevents a large business being done in all these lines.

The existence of large forests of hemlock and their accessibility makes the province exceedingly well adapted for the prosecution of the tanning business on a large scale. The market for New Brunswick tanned leather is large, and extends to the other provinces of Canada and to Great Britain.



CHAPTER XI.

GOVERNMENT.

THE DOMINION.

The form of government in New Brunswick and Dominion of Canada is modelled upon that of Great but the system of popular government has been exte embrace municipal matters. There is no privileged hereditary legislature.

There are three governing bodies (so to speak) in the Parliament of Canada, the Local Legislatures City and Municipal Corporations, and in the choic membership of these bodies, every man, practically s has a voice. The system of self-government is t about as complete as can be desired.

THE GOVERNOR-GENERAL.

At the head of the Government of the Dominio Governor-General, who is the representative of Her the Queen, is appointed by the Crown, and usually ho for five years. His powers in relation to matters within the jurisdiction of parliament are similar exercised by the Queen, but are modified somewha circumstances of the Dominion, and the results to h

The Parliament of Canada consists of two branches: the Senate, and the House of Commons.

THE SENATE.

The members of the Senate are appointed by the Governor-General on the advice of his council. Their tenure of office is for life, or until they have become disqualified under the Act regulating their appointment. Members of the senate receive a sessional allowance of $1,000 for each session of parliament, besides an allowance for travelling expenses. New Brunswick is entitled to be represented by twelve senators. To be eligible for appointment to the senate a person must be a male, of the age of thirty years, a British subject, possessed of property, above all incumbrance and liabilities, to the value of $4,000, and a resident of the province for which he is appointed.

THE HOUSE OF COMMONS.

The House of Commons is elected by ballot every five years, unless sooner dissolved. A candidate for a seat in the House of Commons requires no other qualification than is necessary to entitle him to vote at the election of a member. New Brunswick elects sixteen members of the House of Commons: the city of St. John electing one, the County of St. John two, the electoral district of Victoria, which includes the Counties of Victoria and Madawaska, one, and each of the other counties one. This representation is subject to increase after each decennial census until a specified maximum is reached. A member of the House of Commons receives a sessional indemnity of $1,000 for each session besides an allowance for travelling expenses.

There must, by law, be a session of parliament once in every year.

THE MINISTRY.

The administration of the Government of Canada is vested

in twelve heads of departments, with whom are usually associated the Speaker of the Senate, and sometimes one or more members without office. The Departmental Members are known as Ministers, and include the Ministers of Justice, Public Works, Finance, Inland Revenue, Railways and Canals, Militia, Agriculture, Customs, Marine and Fisheries, the Interior, the Secretary of State, and the Postmaster-General. Their Salaries are each $7,000 per annum.

THE FRANCHISE

at elections for the House of Commons is as follows:—

Every male person being a British subject and twenty-one years of age is entitled to vote, provided that he possesses one of the following qualifications, viz:—

Is the owner or occupant otherwise than as a tenant, of real estate to the value of $300 in a city, $200 in a town, or $150 in a country district.

Or, is a tenant at an annual rental of at least $20, or a half yearly rental of at least $12, or a quarterly rental of at least $6, or a monthly rental of at least $2.

Or, possesses an income of not less than $300.

Farmer's sons residing with their parents, and the sons of the owners of real estate in the cities and towns, may vote where the property qualification of the parent is sufficient if divided to give his sons the necessary qualification.

Special provisions are made for other classes.

THE PROVINCIAL GOVERNMENT.

The local affairs of the provinces, including several classes of subjects not strictly local and specified in the British North America Act, are dealt with by the Provincial Legislatures.

THE LIEUTENANT-GOVERNOR.

In each province there is a Lieutenant-Governor exercising in respect to matters within the jurisdiction of the Local

es the same powers as the Governor-General exer-
spect to subjects within the jurisdiction of the
Parliament. The Lieutenant-Governors are ap-



the Governor-General. The Lieutenant-Governor
runswick has a salary of $9,000 per annum paid
minion.

THE EXECUTIVE GOVERNMENT.

The administration of provincial affairs is vested in an Executive Council of nine members.

The public lands are under the control of the Crown Land Department.

THE LEGISLATURE.

The Legislature consists of a Legislative Council not exceeding eighteen members and a House of Assembly of forty-one members. Members of the Legislative Council are appointed by the Executive Government. To be eligible a person must possess real estate to the value of $2,500, be a British subject of the age of at least 25 years and reside in the Province. The term of office is for life or until the persons are disqualified under the statute creating the office.

The property qualification of a member of the House of Assembly is the possession of freehold or leasehold estate to the value of $1,200 over and above incumbrance. A candidate must also be of the age of 21 years and upwards, and a British subject.

The members of the House of Assembly hold their seats for four years unless the House is sooner dissolved. There must be a session of the Legislature every year. Members of both branches receive a sessional allowance of $300 besides travelling expenses.

THE FRANCHISE.

Every male person, being a British subject twenty-one years of age and possessed of real estate to the value of $100, or personal estate to the value of $400, or both together to the value of $400, or an annual income of $400 is entitled in New Brunswick to vote for members of the Assembly. This practically gives a vote to every industrious man. Any changes likely to be made in the qualification of voters will be to reduce it, so as to extend the



franchise to any deserving citizens who do not come within the present qualification.

DIVISION OF REPRESENTATION.

The City of Saint John elects two members to the House of Assembly; the City and County of Saint John elect four members; the Counties of York, Charlotte, Northumberland and Westmorland elect four each; the County of Kings elects three; the Counties of Queens, Sunbury, Carleton, Restigouche, Gloucester, Kent and Albert each elect two; and the Counties of Victoria and Madawaska each elect one.

THE MUNICIPALITIES.

The rate-payers in each county of New Brunswick are by law a corporation, and have full control of all local matters, such as in England are vested in the Courts of Quarter Sessions, Parochial Boards and other similar institutions. Each parish in a county elects two or more councillors, and the councillors so elected form the governing body of the county. Every rate-payer is eligible to be elected a member of the Municipal Council, and all rate-payers of the parish have a voice in the election.

The Municipal Council has, as a general rule, two sessions a year. It possesses very large local power, as it imposes the direct taxation necessary for all County purposes, such as the erection of Court Houses and Gaols, the payment of Constables and Crown Witnesses and other incidental expenses connected with the courts, the salaries of Municipal Officers and such other expenditures for municipal purposes as the Council may legally incur. It also directs the assessment of the Poor-rate when the Overseers of the poor in any Parish request that a rate shall be levied, and appoints all Parish and County officers.

GENERAL OBSERVATIONS.

It will appear from this review that the system of govern-



ment in operation in New Brunswick is essentially popular, and is calculated to develope in each individual a sense of the privileges and responsibilities of citizenship. Every man who is industrious may have, if he desires it, a voice in the management of the affairs of the country, from the levying of an assessment for some trifling local service up to the determination of the most important questions affecting life and property and the welfare of the Dominion. In no part of the world are the people more thoroughly imbued with the principles of self-government than they are in New Brunswick. By preserving the form of monarchy stability of government is assured, but by the wide diffusion of the franchise the principles of the broadest democracy have full room to play. The settler from the United Kingdom will find in the Province the same complete freedom of thought and speech as he enjoyed at home, and perhaps in a greater degree, since the traditions and family prestige, which have more or less effect in a country like Great Britain in shaping public opinion, have no influence in this Province. The fullest citizenship is a legacy which every man in New Brunswick can leave to his children.

CHAPTER XII.

REVENUE AND TAXATION.

THE DOMINION REVENUE.

The revenue of the Dominion of Canada is derived principally from customs and excise duties. There is no direct taxation for general purposes.

THE PROVINCIAL REVENUE.

The expenses of the Provincial Governments are defrayed out of subsidies, so called, paid by the Dominion Government as well as moneys received from local sources. The Provincial Governments do not impose direct taxation. In New Brunswick the principal source of revenue at present, other than the Dominion subsidies, is the Crown Lands, or more properly speaking, the lumber cut upon Crown Lands.

The Following are the estimated receipts of the Local Government for the year 1886:—

*Subsidies &c., from the Dominion Government,	$489,475 64
Receipts from Public Lands,	125,000 00
Miscellaneous Receipts,	18,950 00
	$633,425 64

*Including interest on balance of debt to credit of province. The subsidies are subject to increase as the population increases after each decennial census.

The estimated expenditure for the year 1886 is as follows:—

Administration of Justice,	$ 15,700 00
Agriculture,	17,300 00
Auditor General,	1,600 00
Bear Bounties,	2,000 00
Blind Asylum, Halifax	720 00
Contingencies, &c., &c.	13,000 00
Deaf and Dumb Institutions,	2,000 00
Education,	167,244 48
Elections,	7,250 00
Executive Government,	26,650 00
Fisheries, Colonial Exhibition, and Immigration,	4,500 00
Free Grants Act,	5,000 00
Interest Bonded Debt,	85,000 00
Legislature,	26,670 00
Lunatic Asylum Maintenance,	35,000 00
Marriage Certificates, Registry,	1,200 00
Natural History Society,	250 00
Public Health,	4,000 00
Public Hospital, St. John,	2,000 00
Public Printing,	13,500 00
Public Works,	187,260 12
Rifle Association,	300 00
Refunds, Crown Lands,	600 00
Surveys and Railway Inspection,	2,000 00
Stumpage Collection,	7,000 00
Unforseen Expenses,	2,000 00
	$629,744 60

MUNICIPAL TAXATION.

The rate of municipal taxation varies in different locali-

ties, but excepting in the cities and incorporated towns is so low as to be almost nominal. In the country districts the taxes are levied, first by a poll tax equal to one-sixth of the whole sum to be raised, of which each male resident of the county over the age of twenty-one years pays an equal proportion. This poll tax varies in different localities from thirty cents to eighty cents, or say from one shilling and sixpence to three shillings and sixpence per head. The remainder of the assessment is levied upon real and personal property, this, including assessments for all purposes, except the district assessments for schools, varies from one-third to one-half of one per cent. on a fair valuation of property; thus the taxes on property or income to the value of $100 would be from thirty to fifty cents, or from one shilling and sixpence to two shilling and sixpence. At the same time that the county rates are collected, and included in the above estimate, a sum equal to thirty cents, or one shilling and sixpence, per head of the population of the county is collected to form what is known as the county school fund, which is disbursed on the order of the Chief Superintendent of the Provincial Board of Education to the trustees of the school districts, to assist in paying the salaries of teachers.

The rate of distribution is $30 per annum for each qualified teacher in the district, and the balance according to the average number of pupils attending schools in the district compared with the whole average in the county.

In many Parishes there is no assessment for the support of the poor, for the reason that there are no paupers to support.

The whole Province is divided into school districts and the rate-payers of each district meet annually and by a majority vote elect trustees to manage the schools, and also at the same time determine how much money shall be raised in each district for school purposes, to supplement the Provin-



cial grant and their proportion of the County Fund. This amount depends entirely upon the decision of the rate-payers themselves, and is large or small as occasion demands; every dollar that is thus raised is expended for the maintenance of schools in the district, and free education is given to every child whether its parents are able to pay their share of the taxes or not.

All municipal taxation, except the County School Fund assessment, is directly under the control of the rate-payers, being imposed by councillors of their own choosing.

CHAPTER XIII.

EDUCATION.

New Brunswick maintains a University known as the University of New Brunswick, the degrees granted by which are recognized everwhere. It is established at Fredericton and is maintained by a Provincial endowment, by revenues from real estate and by fees from students. It is well provided with apparatus and has a good library. There is no theological chair and the instruction is non-denominational. In order to assist those who may not be able wholly to meet the cost of attending the University, a number of students are admitted free under certain conditions, and there is in addition an excellent system of scholarship or bursaries.

The Methodist Church maintains a college at Sackville, Westmorland County, where a course in arts or divinity is given at the option of the student.

The Roman Catholic Church maintains a college at Memramcook, Westmorland, where a course in arts or divinity is given at the option of the student. Instruction is given at Memramcook both to French and English students.

The Methodists also maintain an efficient Academy at Sackville, the Baptists a Seminary at Saint John and the Roman Catholics have several schools for higher education.

THE COMMON SCHOOL SYSTEM.

The great educational factor in New Brunswick is the

Common School System, which is designed to give every child in the Province a sound English education. This system is based upon the principle that the property of the country should pay for educating the youth of the country, and, consequently, it requires every person to pay his share towards the maintenance of schools. This system has been in force for fourteen years, and has become thoroughly interwoven into the institutions of the Province.

At the head of the educational system is the Provincial Board of Education, consisting of the Lieutenant-Governor, the Chief Superintendent of Education, the President of the University and the members of the Executive Government.

A Normal, Training and Model School is maintained at Fredericton where teachers are trained in the theory and practice of teaching.

Although the basis for the maintenance of schools is direct taxation upon the people, the Provincial Government contributes largely towards the salaries of teachers, the Government allowance for this purpose being higher in New Brunswick in proportion to the local contributions than in any other Province of Canada. Common School Teachers receive from the Provincial Treasury, as follows:—

First-class	Teachers,	Males.....	$135 per annum.
"	"	Females....	100 "
Second-class	"	Males.....	108 "
"	"	Females....	81 "
Third-class	"	Males.....	81 "
"	"	Females....	63 "

Reference has already been made to the County School Fund from which a sum is paid to the trustees of each district to aid in the maintenance of the schools. The school districts are so laid out that the children of every settler shall have a school within convenient reach of their home.



In each district are three trustees elected as already stated, by the rate-payers. One of the trustees retires annually but he is eligible for re-election. The trustees decide how many and what grades of schools shall be maintained during the year and at the annual meeting the rate-payers determine what amount to be raised by assessment upon the district, shall be appropriated for school purposes. The schools are subject to the supervision of Inspectors appointed by the Board of Education and to the general superintendence of the Board. There are special provisions in the law for cities and incorporated towns.

Fifteen grammar schools, one for each county, and nearly seventy superior schools, are provided for by law, for purposes of a secondary education, and form a part of the general school system. These, and the common schools, are provided for by legislative grants to be supplemented by grants from the districts or towns in which they are established. The teacher of a grammar school receives from the government $350, and the teacher of a superior school $250, conditioned upon the payment of an equal amount by the local board.

In addition to the Provincial grants for common schools, provision is made to aid poor districts, which receive to the extent of one-third more from the Provincial grants, and one-third more from the county fund. This enables the settlers in the newest and poorest settlements in the province to maintain schools during the whole year.

There is also a legislative grant in aid of school-houses for poor districts.

Under this admirable system schools have been established in all parts of the province, a large and efficient staff of teachers is maintained, and generally the whole educational service is in a most satisfactory condition. The total annual expenditure upon the common school system is fully $500,-

000, and there are about 70,000 children upon the rolls, with an average attendance during the year of about 58,000. This in a country largely made up of new settlements, is a most excellent showing. The new settler in New Brunswick may rest assured that he can secure for his children, at a comparatively small cost, the priceless boon of a good education.

CHAPTER XIV.

THE FOREST.

Next to agriculture the chief industry of New Brunswick is the manufacture and export of lumber. No country in the world is probably more densely wooded than New Brunswick, the area of land in a wilderness state not covered with forests being so small as to be merely nominal. Every acre of improved land in the province, except the dyked lands, was at one time covered with a dense growth of trees, and there are yet millions of acres upon which the forest is unbroken. According to the census of 1881 the following amount of lumber was produced in New Brunswick in that year:—

White Pine,	130,762	cubic feet.
Red Pine,	31,954	"
Oak,	3,316	"
Tamarac,	256,389	"
Birch and Maple,	348,441	"
Elm,	2,400	"
Other Timber,	2,371,061	"
Pine Logs,	657,400	number.
Other Logs,	5,001,069	"
Masts and Spars,	54,406	"
Staves,	955	m.
Lathwood,	3,434	cords.
Tanbark,	55,335	"
Firewood,	781,729	"

The following statistics are from the same census and show the extent of the manufacture of lumber for home consumption and export:—

Number of Saw Mills,	478
" of Employes,	7,175
Wages paid,	$1,243,628
Value of raw materials,	4,355,735
" of articles produced,	6,532,826

The total cut of lumber, not including timber, in New Brunswick in 1883 was 225,000,000 superficial feet.

The most valuable of the New Brunswick forest trees is,

THE WHITE PINE,

so-called, from the whiteness of its wood when freshly cut. It is soft, light, free from knots and easily wrought. Its principal use is for the interior finish of houses, but it is adapted for many purposes.

RED PINE

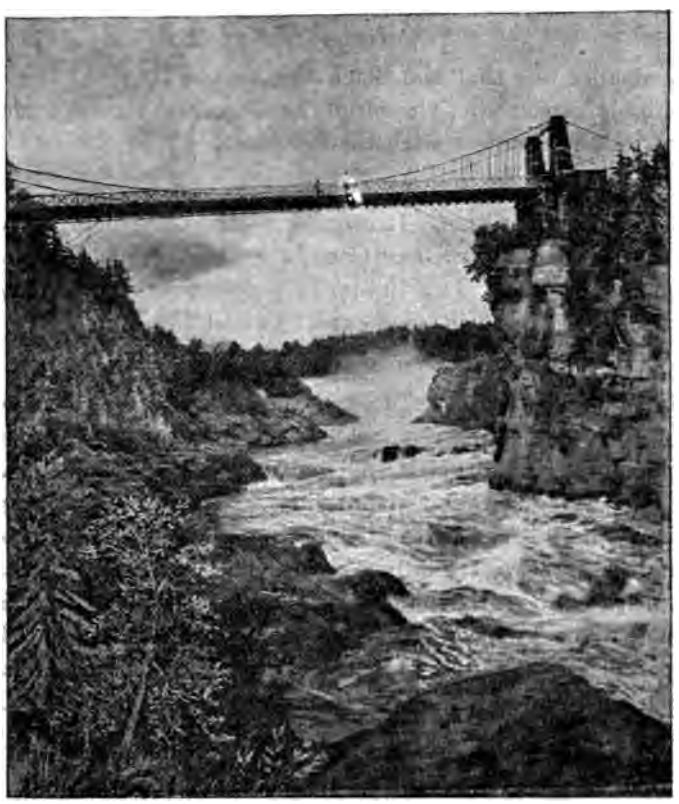
is also found in the Province, and is almost as much esteemed as the White Pine.

There is an extensive young growth of pine, and under a judicious system of forestry, the consumption would probably be exceeded by the annual growth.

BLACK SPRUCE

furnishes most of the deals for export. Thirty years ago it was estimated to constitute one-third of the forest, but this would now be considered an over-estimate. The annual cut has been very great; but the supply is yet large and will probably never be exhausted, or so reduced as to render the manufacture and export of spruce anything other than an important industry. The Black Spruce attains a height of from sixty to eighty feet and a diameter from eighteen to thirty inches. Its chief properties are strength, lightness and elasticity. It is largely used for building purposes.

For export it is sawn into deals, which are 3 inches thick, 7, 9 and 11 inches wide and of various lengths. Other dimensions are also exported. Black Spruce makes valuable "piles."



THE GRAND FALLS OF THE ST. JOHN.

"Spruce logging," as it is called, is a great industry in New Brunswick. It is prosecuted chiefly in the winter season when the snow affords roads by which the logs can be hauled to the banks of the streams. When the spring

freshets come the logs are floated or "driven," as the expression is, to the booms when they are put together into rafts and are taken thence to the mills to be sawed. This industry gives employment to a great many men and horses, and furnishes a market for large quantities of farm produce.

WHITE SPRUCE

is a smaller tree than the Black Spruce and its wood is not so highly esteemed. The supply is large, and it is cut and used indiscriminately with Black Spruce.

BALSAM FIR.

This is a common tree. It is quite resinous, producing what is known in the arts as "Canada Balsam," which exudes through the bark. It is lighter in weight than either of the spruces and is used to some extent in building.

HEMLOCK SPRUCE

is larger in size than the Black Spruce. It is a firm, course-grained wood, lasting remarkably well under water or when kept thoroughly dry. Being very tenacious of nails it is much used for boarding in buildings. In the shape of logs it is much esteemed in wharf-building and in mining. The Hemlock is a widely diffused wood and is found in great quantities in several counties of the Province. Its bark is valuable for tanning purposes. In addition to the bark exported and that used in the country, there is an annual export of extract of the bark to the value of about $200,000. The natural grain of Hemlock, when varnished, is very pretty, and the wood is becoming fashionable for the interior finish of dwellings. Hemlock makes excellent packing boxes.

TAMARAC.

Hackmatac or Larch is one of the commonest trees. It grows tall and straight to a height of eighty feet or more. The butts of the tree and one of the principal roots form a



"knee," and are in great request in shipbuilding, forming an important article of export. Tamarac timber was much used in shipbuilding, but what is known as Bay Spruce has now largely taken its place, most of the large tamarac having been cut. There is yet much of smaller growth in the country, and, as it is a rapidly growing wood, it might be planted with advantage.

CEDAR.

Cedar is one of the most widely distributed and valuable of New Brunswick woods. It grows in wet ground and river valleys; sometimes a swamp of 50 to 100 acres in extent will consist of cedar trees standing so close together that their foliage is scarcely penetrable by the sunlight. It grows to a height of forty feet and large specimens are two feet or more in diameter, but the majority of trees do not exceed a diameter of twenty inches, if measured a few feet from the ground. The wood of the cedar is light, soft, fine grained and easily wrought. It has a pleasing, aromatic odor, which it does not lose if kept dry, and hence is much esteemed as a material for closets. It is practically indestructible by the weather, and will stand a succession of moisture and dryness for many years. Made into shingles it will last upon the roofs of buildings for upwards of thirty years, and its durability, when used as fencing, is even greater. Its lightness causes it to be esteemed by boat-builders. It is well adapted for household utensils as it becomes whiter and smoother by use. On nearly every farm sufficient cedar will be found to provide all requisite fencing, and this is a very important consideration to the settler. The principal use to which cedar is put, except for fencing, is for railway ties or "sleepers," bridge piers, telegraph poles and shingles. The export of this wood is large and is chiefly to the United States. Shingles are of two kinds, shaved and sawed, the former are made by hand, the latter by machinery.

Cedar makes a handsome hedge and is of rapid growth. This is not the true cedar; it is the Thuja Occidentalis of Linneus, and is also called the Arbor Vitæ.

BIRCH.

Black and Yellow Birch may be considered together as they are exported indiscriminately under the name of Birch. The grain of Black Birch is very fine, close and pretty; it takes a bright polish and is used to some extent in furniture and the interior finish of houses. It is practically indestructible under water, and therefore is admirably adapted for piles and wharves. These birches grow upon the best of soils and the supply in the Province is yet very great, although, in many districts, the larger trees, suitable for heavy timber, have been cut. The birch makes excellent fuel.

White Birch and Paper or Canoe Birch, though sometimes confounded are really different varieties. Owing to the vast supply of superior wood these birches are not much used except for the manufacture of show cases, spools, bobbins, brush backs, &c. It is from the bark of the Paper Birch that Indians make their canoes.

BEECH.

Two varieties of Beech grow in New Brunswick the red and the white. The Red Beech is a valuable wood. It is imperishable when kept perfectly dry or constantly wet. Being a hard wood and susceptible of a high polish it makes excellent tool handles, shoe lasts, mallets and the like. For agricultural implements or any purpose where strength and durability are required Red Beech is admirably adapted. It makes excellent flooring and is annually becoming more popular for this purpose. Red Beech forms a considerable part of large forests and is becoming an important article of export. This tree produces very palatable nuts every second year.

MAPLE.

One of the most useful, beautiful and common trees in

New Brunswick is the Maple. There are several varieties of Maple, but in general they may be described as lofty, well shaped trees, with beautiful foliage; they are of quick growth and as they bear transplanting very well are greatly esteemed as shade trees, especially as they do not injure the grass growing beneath them. Their presence in the forest indicates the best quality of soil.

Rock Maple is the king of the deciduous trees of North American forests; sometimes it grows nearly one hundred feet in height with corresponding proportions. In summer when clothed in green it is beautiful to look upon, and in autumn when its leaves change to blood-red, golden-yellow, brown and many other colors its appearance is magnificent. The wood of the Rock Maple is white when freshly cut, but becomes slightly reddish with exposure. The grain is fine, close, silky and very pretty, especially in the accidental, though common varieties, known as Curled Maple or Bird's Eye Maple. Maple is adapted for all the purposes that Beech is, but the more beautifully grained wood is much sought after by cabinet-makers and others desiring a light wood of attactive appearance for finishing purposes. The bird's eye Maple makes excellent violin backs. The ordinary Maple is now sawn into various dimensions for builders' uses, and its popularity is on the increase. As a fuel Rock Maple is superior to all other woods; it makes the best charcoal, and its ashes are rich in alkali.

The Rock Maple is also known as the "Sugar" Maple, because of the richness of its sap in the saccharine principle. Maple Sugar is a regular article of commerce, the quantity produced in New Brunswick annually being about half a million pounds. It is made from the sap of the Maple which begins to flow in the month of March. Syrup made from the sap is preferred to the finest grade of West India molasses.

ELM.

There are two species of Elm in New Brunswick, the

White and the Red. Both are beautiful shade trees. The White Elm often grows to the height of one hundred feet, its branches are long and pendulous, its foliage rich and pleasing in shape. It grows wild on the low, deep soiled intervals, and the quantity available for commercial uses is limited. The wood is strong, tenacious and elastic, does not split easily and bears the driving of bolts and nails better than any other wood. It is durable if kept either constantly wet or constantly dry, but decays rapidly when these conditions alternate. It is used in making ships' blocks, and for other purposes in which wood of its peculiar properties is required.

The Red Elm does not grow to as great a size as the White Elm. Its wood possesses the same properities as that of the White Elm but is somewhat coarser and more durable. Its home is on dry elevated situations.

BUTTERNUT

is a species of walnut found along river banks. It grows to a considerable size and yields in profusion nuts which are agreeable to the taste and very oily. The name of the tree is derived from the fact that the Indians formerly used to pound the nuts and having boiled them so as to separate the oil, used it with their food as a sort of butter. Butternut wood is light and of a reddish tinge, taking a high polish. It is used in making furniture, for wainscoting and other purposes. It is easily propogated and grows rapidly. There being a constant demand for the wood its cultivation would probably be found profitable.

ASH

is found in New Brunswick in several varieties, the white, black and yellow chiefly, the wood of each differing according to the soil and situation where it is grown. The White Ash is a common tree growing to the height of sixty feet with a diameter of eighteen inches or more. Its growth is



rapid and its foliage beautiful, the trunk is perfectly straight, the wood strong, tough and elastic. Black Ash is a smaller tree than White Ash and its wood is somewhat coarser. It is a fashionable wood for bedroom furniture, its texture being very pleasing and is used for a variety of purposes in first-class buildings. Being already a valuable article of commerce, its supply will probably not long keep pace with the demand; its cultivation will likely be profitable. It is used by the Indians in the manufacture of baskets, for which it is admirably adapted. The Yellow Ash is similar to the Black Ash but is lighter in color. The Red Ash is somewhat similar to the White Ash.

OAK

is found in New Brunswick in three varieties, the white, the red and the grey. The wood of the latter is very durable. The supply is limited.

CHERRY

is found in abundance. The fruit is small and slightly bitter. None of the varities attain sufficient size to possess much commercial value.

POPLAR

occurs in two varieties, the Aspen and the Balsam Poplar, or "Balm of Gilead." Poplar wood is very white and of light weight. It becomes hard and tough when dry and takes a high polish. Its principal commercial use at present is in the manufacture of what is known as Excelsior, an article used for mattress making, upholstering and packing purposes, the wood for these purposes being cut into long shreds. The demand is large and increasing. The lightness, whiteness and durability of Poplar are causing it to become very much esteemed for many purposes. It makes an excellent paper pulp.

BASSWOOD

is found in considerable quantities. Its properties are some-

what similar to those of poplar. The natural color of the wood is pale yellow.

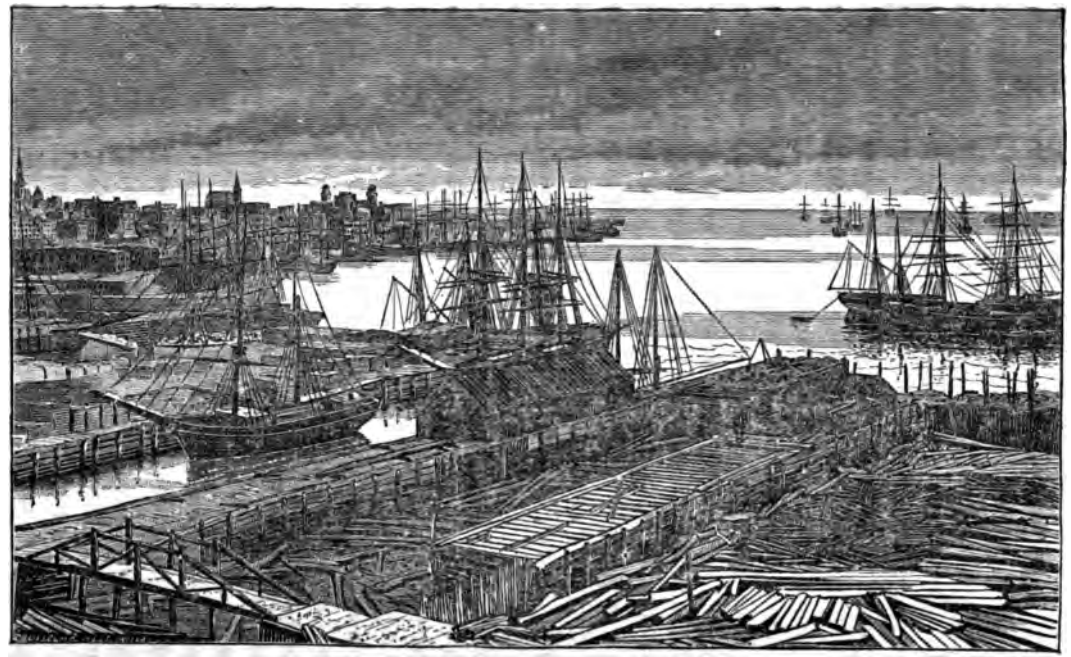
HORNBEAM and IRONBEAM

are tough, heavy woods capable of sustaining great weight. These trees do not attain a large size.

Alders, Willows and other inferior trees abound, but those above named constitute the principal part of the New Brunswick forests. It will readily be admitted that such forests must be exceedingly beautiful, and the soil which supports them of great fertility. Such is particularly the case with the deciduous trees, "the hardwood ridges," as they are called, that is, the rolling hills covered with Maples, Birches and Beeches, with a few scattered Spruce and Pine trees, not only making a most attractive landscape, but being generally, when cleared, the finest of farming land. But if these ridges are beautiful to look upon in the summer, they are resplendent in the autumn when the ripened leaves, after the early frosts, begin to change their color. The brilliant scarlet and other hues of the Maple, the golden-yellow of the Elm, the almost countless shades and tints of red, blue and brown, relieved by the sombre evergreens, make up a picture which the eye never grows weary of and words cannot describe.

GENERAL OBSERVATIONS.

Although for nearly one hundred years the forests of New Brunswick have furnished the greater portion of the exports of the Province, and the trees have been cut in a most lavish and wasteful manner, it is doubtful if their greatest commercial value has yet been realized. It will be seen from the facts above given that the Province contains extensive supplies of wood, valuable for countless purposes. The forests are intersected by streams in all directions, and these with the railways furnish the best possible means of convey-



SAINT JOHN HARBOR.

ing the wood to the seaports, whence it can be shipped to a market. Innumerable water powers afford facilities for cheap manufacture, in fact all the elements exist requisite to make the Province the seat of very extensive wood-working establishments, except the single essential of capital. A prominent architect of Liverpool, England, in a letter to Mr. Cornwall, agent of New Brunswick in England, after speaking of the adaptability of the New Brunswick woods to numerous purposes in connection with buildings, said:—

"There must be a great advantage in making wood-work in countries where the woods are available, as well as cheap steam producers, besides the saving of carrying so much waste timber such a long distance, for at least one-seventh of the timber imported here is cut to waste in planing, sawing and refuse. The extra cost of carrying manufactured articles would, I judge, not nearly amount to the difference."

Large orders have been offered by English houses to manufacturing establishments in New Brunswick, but, for lack of capital, they have not been accepted. The *Monetary Times*, a commercial paper published in Toronto said:—

"Great Britain and other European countries use enormous quantities of wooden goods, and they are largely made in the United States and shipped from Boston and New York. Why should not Canada, whose supplies of timber are nearer the sea-board, compete successfully? It can be done; but it is not to be done in a day. Nor is it to be done without observation and pains."

But it is not only to the European Market that New Brunswick may look for the disposal of the products of its forests. In the United States the question of wood supply is becoming annually more serious, and the people of that country will shortly find themselves compelled to admit Canadian wood goods duty free. Already the tendency in this direction is unmistakable. It is evident, therefore, that the manufacture of all descriptions of wooden goods may be regarded as likely, at no distant day, to form an important

industry in New Brunswick. Among the articles which may be advantageously made are:—building materials for both outside and inside finish; shipbuilding, from the hull to the spars; agricultural and horticultural implements; waggons, carriages, sleighs; packing, salt, fish, and other boxes; tubs, pails, churns; step-ladders; furniture of all kinds; broom, hoe, pick, edge tool, and other handles; clothes-wringers, washboards, clothes and towel horses; bench screws; venetian blinds and slats; cloth boards and rollers; bobbins, spools; ships' blocks; coopers' work of all kinds; boot and shoe lasts, trees and crimps; musical instruments; railway ties; carving and turned work; wood pulp.

Several establishments are already engaged in the manufacture of various descriptions of wood goods, among them being the Quaco Wood Manufacturing Company, the Petitcodiac Spool and Bobbin Works, and the Woodstock Wood-working Company, and the establishment of the Messrs. Flewwellings, at Hampton, and others, all of which are doing an excellent business. The attention of investors is directed especially to this industry.

To the settler in New Brunswick the existence of an abundance of the best of fuel and building and fencing material is an advantage which can scarcely be over-estimated. It is truly one of the greatest recommendations which any country can have. In addition to the value of the fuel for domestic use, the cutting of it for sale, particularly on land adjacent to the railways, is a profitable occupation, as will be seen by statistics given elsewhere. Wood for fuel is a not unimportant article of export to the United States, and the demand will no doubt largely increase. The New Brunswick farmer has, for the labor of cutting it, the material for his buildings and fences, and an inexhaustible supply of fuel, and these considerations far outweigh any supposed advantage which the prairie farmer may have in

preparing for his first crop. The experience of farmers in New Brunswick has clearly proved that the existence of the forest is one of the greatest advantages which the settler can



MASONIC TEMPLE, ST. JOHN.

possess. In the matter of fuel nothing but experience can tell the difference in comfort between the great fire of blazing logs which a New Brunswick farmer heaps up on a winter night, as much for the pleasure of looking at it as for warmth, and a smouldering fire of coal or of wood, so scarce that the pieces must be counted, which his brother in the



Far West has to be content with. When the logs blaze and crackle on the hearth, their streaming light illumining every corner of the room, what matter if the storm blows fierce or the mercury drops below the freezing point? So long as the forest lasts, and there is no reason why the preserved wood lots should ever be exhausted, the New Brunswick farmer need never fear the cold. The problem of fuel is one with which the settler in this Province need not concern himself.



CHAPTER XV.

TH FISHERIES.

The fisheries of New Brunswick are among the most important of its industries. They include not only exhaustless supply to be drawn from the Bay of Fundy, Bay Chaleur and the Gulf of St. Lawrence, but the yield of so many streams and lakes that a mere catalogue of their names would be wearisome. The enormous amount of a most excellent article of food available from this source and its comparative cheapness is not the least advantage which the population of New Brunswick enjoy, and in a commercial point of view the fisheries are of incalculable value. The deep sea fisheries furnish employment to a large number of people, and the inland fisheries, besides being in some degree a source of food to the people, attract hundreds of sportsmen annually to the Province, and the number is rapidly increasing. The total export of fish from the Province in the year 1884 was valued at $896,095, but this by no means represents the value of the catch, as it takes no account of the large quantity used for home consumption in Canada.

The following statistics of this industry, from the census of 1881, will be interesting:—

FISHERY STATISTICS, 1881.

Number of	vessels	engaged	in	fishing,.....	205
"	boats	"	"	.....	4,284
"	men	"	"	.....	7,315

Fathoms of net in use,		336,089
Fascines Fisheries,		333
Cod taken,	quintals,	62,444
Haddock,	"	49,716
Herring,	barrels,	263,832
Gaspereaux,	"	16,175
Mackerel,	"	25,272
Sardines,	"	20,935
Halibut,	"	43
Salmon,	"	19,276
Shad,	"	1,700
Eels,	"	584
White Fish,	"	40
Trout,	"	355
Other Fish,	"	23,682
Oysters,	"	11,116
Lobster,	lbs.	4,349,122
Fish Oil,	gals.	18,420

The catch of fish in 1881 was worth, according to the average price at which the fish exported were valued, over $2,300,000, being nearly half as much as the total out-put of lumber.

The export of Canned Lobster has been prosecuted largely in some years, and has assumed large proportions. The market is in Great Britain, the United States, Australia, France and elsewhere.

The export of fresh fish, principally Salmon, Smelt and Bass to the United States, has already reached large dimensions, and is growing every year. The fish are frozen before shipment or are shipped fresh on ice. They are taken on the North Shore rivers and are sent to their destination by rail. The completion of the link between the Intercolonial and New Brunswick Railways by the consruction of the bridge accross the River Saint John at its mouth,

and of the Northern and Western Railway whereby the delay of transhipment will be avoided, is expected to materially increase this branch of business.

SEA FISHERIES.

The principal fish taken in the Bay of Fundy are the Cod, Pollock, Hake, Haddock, Herring, Shad and Mackerel. The



SOUTH WHARF, ST. JOHN, N. B.

fishing grounds extend down to the entrance of the Bay and around the islands of Grand Manan, Campobello and the West Isles and into the estuaries of the principal rivers. The Cod of the Bay of Fundy are a large fish, quite equal to any taken in American waters. The Pollock, the Hake and the Haddock are also very abundant. The Haddock is eaten fresh but is generally preferred when slighly salted and smoked; it is then known in commerce as "Finnan Haddy."



The Bay Herrings are of medium size but of good flavor. The Bay of Fundy Mackerel are small, but very much esteemed. The Halibut is a large fish of the Flounder species. Its flesh is white and firm, and though somewhat dry is highly thought of when fresh. When slightly salted and smoked it is very palatable. The Bay Shad is perhaps the most delicious fish produced in New Brunswick waters. The averge weight is about 3 lbs. The Gaspereau or Alewive is a small species of Shad, caught in large quantities. The Bay of Fundy fisheries are prosecuted at all seasons of the year.

The fisheries in the Gulf of St. Lawrence can only be prosecuted from April until November, both inclusive, owing to the presence of ice. The principal catch is of the Cod. The Gulf Cod is somewhat smaller than the other varieties taken on the North American coast, but is of excellent quality. Hake and Haddock abound in the Gulf. Herrings are found in countless shoals, and in the fall they are very fat and of excellent flavor. This branch of fishing is capable of indefinite expansion, and as the quality of the "fall herrings" is very high, its extensive prosecution would probably be found profitable. Mackerel, Gaspereaux and Striped Bass are abundant, and the quantities of smelts taken are prodigious. There is, apparently, no limit to the supply.

Of shell-fish there are found on the Gulf Coast Oysters and Lobsters of excellent quality. Other fish are taken on the North Shore, but those above named are the principal, except the Salmon.

Salmon of the finest description are taken in the estuaries of all the principal rivers flowing into the Gulf and Bay Chaleur. The fish are large and of admirable flavor, commanding a ready sale. They are exported fresh, frozen, smoked, salted, spiced and pickled, and the demand seems to keep pace with the supply. On the two principal rivers, the Miramichi and the Restigouche, hatcheries for the pro-

pogation of fish are maintained by the Dominion Government.

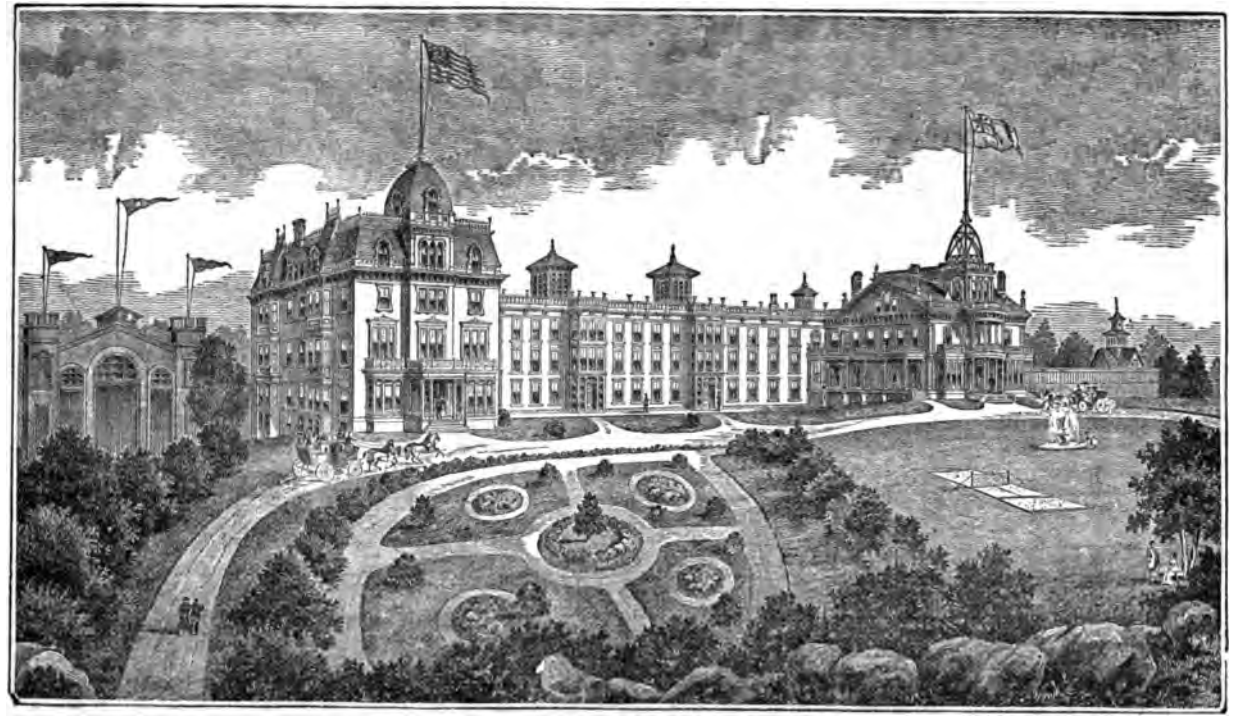
INLAND FISHERIES.

While, as has been already mentioned, the Inland Fisheries of New Brunswick are of some value to settlers as a food supply, their great importance is due to the fact that they attract to the country many sportsmen who expend large sums of money on their excursions. The Salmon fishing on the Restigouche has a reputation which is almost world wide, and every year distinguished visitors from Great Britain and the United States may be found spending a holiday in the glorious sport afforded by this noble river. Other streams in the Province are almost equally good, but none are quite as celebrated. On the tidal portions of the streams the Dominion Government grants fishing leases. On the non-tidal portions the right to lease is vested in the Local Government as riparian proprietor in the case of ungranted lands and in the riparian proprietors in the case of granted lands.

The right of surface fly fishing on waters under the control of the Provincial Government is granted to the highest bidder at a public sale, whereof due notice is given. Leases will not be granted for a longer term than five years. The lessee is bound to keep at least one efficient guardian of the fishery within the bounds of his lease. Short term leases may be obtained on application to the Surveyor-General.

Among the rivers available for lease under these provisions, either now or at the expiry of the outstanding leases, are the following:—

The Restigouche, above the mouth of the Upsalquitch. The Provincial Fishery Overseers report good pools to the forks of the Restigouche, and salmon in abundance. Of large trout they say "the supply seemed inexhaustible." The main branches of the Restigouche also afford good salmon fishing. Of the Upsalquitch, a large tributary of the



CASTLE HOTEL, MOUNT PLEASANT, ST. JOHN, N. B.



Restigouche, the overseers say that it is "a first-rate looking river for salmon, and from the best information we could obtain we believe that there is good early fishing and again late in the season." Of the Patapedia, a tributary of the Restigouche, they say: "we are led to believe that large numbers of salmon annually ascend this river." Of the Quatawamkedgewick, they say that "the fishing is exceedingly good."

Middle River and Little River, emptying into Bathurst Basin, Tete-a-Gauche River, emptying into Bathurst Harbor, Big Tracadie, emptying into the Gulf of St. Lawrence, Tabusintac, a river in the same neighborhood, the Kouchibouquac and the Richibucto, emptying into Northumberland Straits, are all highly spoken of both as Salmon and Trout streams. The Miramichi and its numerous branches have an established reputation among anglers. Among the tributaries of the St. John the Tobique is the only one in which Salmon are taken in large numbers. It is usually well stocked with Salmon and abounds with Trout and, one of its branches is famed for Whitefish.

Salmon cannot ascend above the Grand Falls of the St. John, but on the upper part of this great river are tributary streams which afford the finest trout and white fish. Hundreds of anglers visit them every season. The branches of the streams flowing into the Gulf of St. Lawrence approach those of the tributaries of the St. John very closely and a short "portage" or "carry" enables the sportsman to take his canoe and camping materials from one water system to the other, and in this way a sporting trip can be made across the province in several places, the distance to be traversed being from one hundred to two hundred miles, according to the directness of the route taken. Such a trip would be for the most part through an unbroken wilderness, on streams abounding with fish and flowing through forests containing much game.

Flowing into the Bay of Fundy, and particularly in the County of Charlotte, are numerous rivers in which there is the best of trout fishing. Indeed there is not a county in the province in which streams cannot be found where anglers can thoroughly enjoy themselves.

Some of the routes which fishermen take are as follows:—

From St. Leonard's Station on the New Brunswick Railway to the head waters of the Restigouche, and down the Restigouche to the Intercolonial Railway crossing. The distance is over 100 miles, and the sportsmen will have plenty of the best salmon and trout fishing. The towns at the mouth of the Restigouche have excellent hotels, and all the accommodations of first-class watering places are being provided.

From Andover Station on the New Brunswick Railway up the Tobique to Nictau Lake, and thence to the Nepisiquit and down the Nepisiquit to Bathurst. Distance about 170 miles, with both salmon and trout fishing.

From Andover to Nictau Lake, as above, from Nictau Lake to the Nepisiquit, down the Nepisiquit for a short distance and thence to the Upsalquitch, down the Upsalquitch to the Restigouche and down the Restigouche to the sea. Distance about 200 miles. This trip may be lengthened 150 miles by ascending the Restigouche, portaging to Grand River, descending the Grand River to the St. John, and down the St. John to the starting point, or it may be prolonged almost indefinitely when the St. John waters are reached. Good trout, salmon and white fish fishing.

From Andover up the Tobique to Long Lake and thence to the head waters of the southwest Miramichi, and down the Miramichi to the sea. Distance over 300 miles, with good salmon and trout fishing. This trip may be lengthened by ascending the tributaries of the Miramichi into the unexplored wilderness of New Brunswick.



SQUA-TOOK PEAK.

A shorter trip and one much esteemed is made by driving out from Bath Station on the New Brunswick Railway to the Miramichi and going as far either up or down stream as time will permit. Good salmon and trout fishing.

From Edmundston up the Madawaska thence to Beardsley Lake on the head of the Squa-took, and down through the Squa-took Lakes, the Toledi River, and Lake Temiscouta to the starting point, 80 miles. The fish taken are trout, white fish, and toledi, a large fish resembling a trout, but weighing sometimes as high as fifteen or twenty pounds.

Shorter excursions may be made on the streams above mentioned and on other streams.

In the St. John River itself many salmon are taken, as well as shad, gizzard fish, perch, and a variety of other small fish. Sturgeon are taken in large numbers in the lower part of the river, and are exported to the United States. These fish sometimes weigh over 250 pounds. The sturgeon fishery is of considerable importance.

For information as to fishery leases, times of sale and the like, address THE SURVEYOR-GENERAL, *Fredericton, New Brunswick.*

CHAPTER XVI.

MINERALS.

The dense forest which covers the greater part of New Brunswick renders a thorough geological exploration almost impossible, but enough has been ascertained to justify an expectation that the mineral resources may play an important part in the future of this Province.

The geological divisions of the province, as laid down by the Geographical Survey, and shown upon the last map are as follows:

Laurentine,
" Limestone,
Pre Cambrian,
Cambro Silurian,
Dolerite,
Silurian,
Granite,
Devonian
Lower Carboniferous Laurentine,
Lower Carboniferous,
Middle Carboniferous,
Triassic.
Trachyte-Felsite.

The minerals known to exist in quantities which will pay for working are as follsws:—

COAL.

The Carboniferous formation of New Brunswick embraces an area of about 6,500 square miles, or parts of York, Sunbury, Queens, Kings, Westmorland, Albert, Kent, Northumberland and Gloucester, with several outliers in other counties. The only productive mines are those at Grand Lake—already referred to in the description of Queens County. The seam is a surface one, 22 inches thick and is known to extend over a very large area—probably at least 600 square miles. The coal is an excellent steam coal, very highly esteemed for blacksmiths' use, and is unequalled for coking.

The very remarkable mineral known as Albertite, the exact nature of which has been a source of dispute among scientists, was found in very considerable quantities in Albert County. It is a brittle, jet black, glossy mineral, free from smut. It burns readily and melts when exposed to heat under cover. Albertite is now regarded as a pure petroleum, and is of great commercial value; the probabilities of further discoveries of paying deposits are of great interest.

In Westmorland and Albert County petroleum springs abound.

The Albert shales yield from 35 to 50 gallons of oil fit for illuminating purposes to the ton. Owing to the abundance of petroleum these shales are not utilized, but it is not unlikely that they may come to possess a high commercial value.

ANTIMONY.

Antimony occurs in several places in New Brunswick, but the largest deposit is in Prince William, in York County, where it is found in very large quantities as sulphuret of

antimony. The quality of the ore is good, and there is more or less metallic Antimony mixed with it. This is one of the most important deposits of Antimony known to exis anywhere, paying deposits being very few in number.

MANGANESE

is widely distributed in New Brunswick. The best known deposits are at Shepody Mountain in Albert; near Sussex Vale in Kings; at Quaco in St. John and at Tete-a-Gouche in Gloucester. Mines have been opened at all these points.

IRON.

Numerous deposits of iron ore are known to exist in New Brunswick. The best known of these is the deposit of red hematite in Jacksontown, Carleton County, commonly known as the Woodstock Iron Mines. The iron produced from this ore is of a very superior quality, its "resistance" being remarkably high. Large quantities of this ore have been mined, smelted and exported, and it has been used in the manufacture of armor plates for the British Navy. The iron is somewhat brittle owing to the presence of phosphorous, but probably means could be found to remedy this objection. Throughout Carleton County large deposits of iron ore are found and they always occur in connection with limestone. Being in the heart of a country where there are thousands of acres of the finest hardwood forest, for the manufacture of charcoal, they afford the elements of a highly important industry.

Bog iron ore is very abundant in New Brunswick and is found in considerable quantities near the Grand Lake Coal Mines, but whether the deposit is large enough to warrant the erection of smelting works is not at present known.

Without expressing any opinion as to the probable future value of the New Brunswick deposits of iron ore, it is sufficient to say that the distribution of excellent ores is wide-

spread and the quantities enormous, that they are nearly always found associated with limestone, and that the fuel for smelting is always obtainable at a low price.

COPPER.

Copper ores are found in New Brunswick in considerable quantities. Near Bathurst there is a considerable deposit of the sulphuret, and in this vicinity are numerous other deposits of the same ore, which it is thought might be profitably worked. Along the Bay of Fundy coast there are numerous deposits of copper in Albert, St. John and Charlotte Counties, which only need capital to develope them. A copper mine is now operated near Dorchester, in Westmorland County. Copper ore is also found upon the Tobique River.

Of other metals and metallic ores known to exist in greater or less quantities we have

LEAD

which in the form of Galena is found in several localities. This ore occurs on the shore of the Tobique River, a few mlies from St. John and possibly in large enough quantities to have a commercial value. The extent of the deposit has not been ascertained. It occurs in Charlotte County also, in the Island of Campobello, and also near Norton in Kings County. The latter deposit probably contains a good percentage of silver.*

SILVER

is found in several localities, the principal being the Elm Tree, in Gloucester County, near Bathurst, which it has been thought would afford a profitable investment.

GOLD

is very widely diffused in New Brunswick. It may be washed from the sand of many of the rivirs which flow

* Dr. Bailey.

from the primary formations, but as yet no paying deposit has been discovered. It has been found in Albert County near Elgin by Dr. Bailey; Professor Hind found it in the Upsalquitch in Restigouche County; on the Nepisquit in Gloucester County; in Campbell River, Long Lake and Blue Mountain Brook, in Victoria County; on the Little Southwest Miramichi, in Northumberland County, and at Springfield and the Dutch Valley Road, Kings County. The writer has found it on Falls Brook near Grand Falls Victoria County, on the Wapskehegan, Campbell River and Serpentine in the same County; he has good evidence of its having been found on the Muniac, Victoria County, and the Becaguimec, Carleton County. Gold bearing quartz is said to have been found on the Tobique River. The conclusion of all observers relative to the existence of gold in New Brunswick is that in the present state of our knowledge of the country it is not judicious either to affirm or deny its existence in paying quantities. Several excellent specimens of gold bearing quartz have been seen by the writer and their owners have affirmed that they were discovered in New Brunswick. As in every case the parties were not financially able to thoroughly prospect the county where the precious metal was alleged to be found, the value of their discovery, if discovery it was, has never been shewn. There are many persons who are confident that gold will be found in paying quantities in New Brunswick.

Various other metalliferous ores exist in the province, such as ores of zinc and tin, but only in small quantities.

GENERAL OBSERVATIONS.

As stated at the outset of this chapter the wilderness condition of the greater part of New Brunswick presents an almost insurmountable obstacle to thorough prospecting. In a country where the rocks are covered with soil, or with moss, it is impossible to say what mineral wealth may not

remain concealed. The best authorities hesitate at expressing any opinions, but the most general, such, for instance, as that of the distinguished Prof. Hitchcock, who in his report on the geology of Maine, alludes to the district on the east of the St. John, drained by the tributaries of the Tobique, as a most promising field for investigation; or of Prof. Hind who, while expressing his high estimation of the mines already worked, said that the development of the coal,



WIGGINS ORPHAN ASYLUM.



SAVINGS BANK.

copper, iron and gold deposits were worthy of further enquiry, and of Dr. Bailey who said it is impossible to speak of the productive capacity of the metalliferous rocks with certainty until their yeilding powers had been fairly tested. Yet enough is known to justify an expectation that in time

the mineral deposits may become a source of great wealth to the Province.

In addition to the metallic ores there are other minerals such as plumbago, which is found near St. John in large quantities and of very good quality. It is mined on a limited scale for export. Near Sussex, Kings County, there are Salt Springs. In Charlotte County is a deposit of Anthracite Coal of unknown extent. Gypsum is found in inexhaustible quantities in Albert, Westmorland, Kings and Victoria Counties. Limestone of excellent quality is abundant. Red, Grey and Bluish Granite can be had in unlimited quantities, and the Freestone Quarries are inexhaustible. A mere catalogue of the minerals of economic value with the localities in the Province where they occur would fill many pages. In fact for a Province of its area it contains a remarkable variety of mineral deposits of greater or less value. Capital and energy have, in the mineral resources of New Brunswick, an extensive and almost unexplored field.

CHAPTER XVII.

AGRICULTURAL PROGRESS.

The following tables, complied from the census of 1851 and the census of 1881, will illustrate the progress which has been made in agriculture in New Brunswick during the last thirty years. The first table shows the number of acres granted and acres cleared in the years 1851 and 1881 respectively.

TABLE SHOWING THE NUMBER OF ACRES OF LAND GRANTED AND THE NUMBER OF ACRES OF LAND CLEARED IN EACH COUNTY IN THE PROVINCE IN THE YEARS 1851 AND 1881 RESPECTIVELY.

Name of County.	1851.		1881.	
	Acres Granted.	Acres Cleared.	Acres Granted.	Acres Cleared.
Albert,	233,700	32,210	363,649	61,798
St. John,	309,147	Not given	349,716	25,158
Charlotte,	317,245	45,656	424,989	97,953
Kings,	662,752	120,923	760,652	189,531
Queens,	514,204	63,710	624,117	100,319
Sunbury,	377,078	15,587	440,325	36,902
York,	970,914	69,017	1,401,943	132,753
Carleton,	465,802	55,537	794,716	150,771
Victoria,*	345,600	26,834	1,840,904	79,175
Westmorland,	577,440	92,822	700,078	171,090
Kent,	386,398	35,496	549,625	83,642
Northumberland,	986,168	30,221	1,077,367	53,416
Gloucester,	332,902	19,812	438,085	48,639
Restigouche,	156,979	8,895	216,332	21,813
The Province,	6,636,329	616,720	9,982,498	1,253,299

Victoria includes Madawaska in the census returns.

The following table shows the quantity of hay, oats, wheat and potatoes raised in the several counties of the province in

the years 1851 and 1881, the amounts being taken from the census returns of those years.

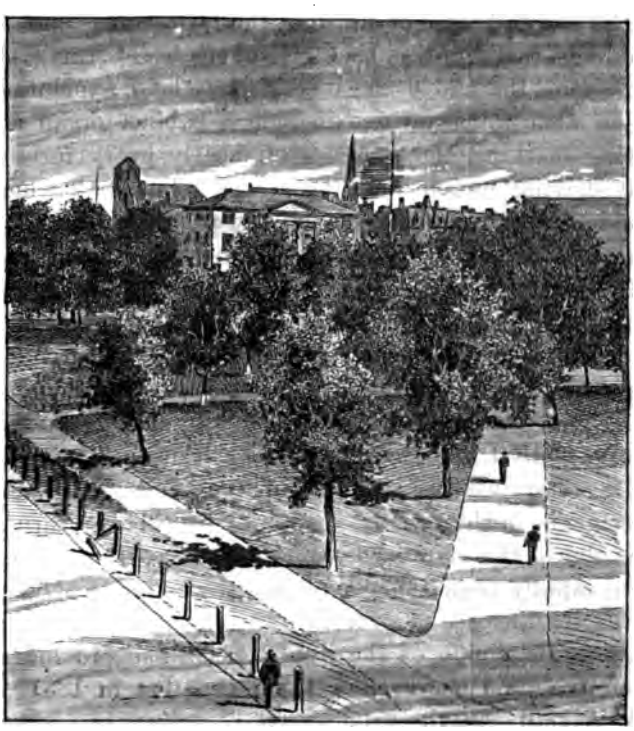
TABLE SHOWING THE QUANTITY OF HAY, OATS, WHEAT AND POTATOES RAISED IN THE SEVERAL COUNTIES OF NEW BRUNSWICK IN THE YEARS 1851 AND 1881 RESPECTIVELY.

Name of County.	Tons of Hay.		Bush. Oats.		Bush. Wheat.		Bush. Potatoes.	
	1851.	1881.	1851.	1881.	1851.	1881.	1851.	1881.
Albert,*	.....	.....	.....	.....	.....	.....	.....	.....
St. John,	6,855	12,703	30,961	46,617	249	.....	105,695	128,329
Charlotte,	17,076	27,516	69,988	89,631	3,263	30,424	163,117	304,811
Kings,	38,811	60,633	178,968	333,995	14,895	45,601	303,568	734,369
Queens,	22,556	33,877	97,359	159,091	7,222	17,811	168,656	405,919
Sunbury,	10,069	16,595	40,024	60,496	5,551	12,137	116,357	194,937
York,	26,430	45,999	205,343	390,444	16,142	57,270	233,695	558,862
Carleton,	15,718	42,209	234,628	850,851	21,165	90,869	174,416	602,595
Victoria,	6,961	16,151	59,163	199,021	5,265	43,922	84,527	251,856
Westmorland,	33,937	67,957	145,396	310,574	40,619	81,495	282,224	1,005,802
Kent,	8,067	18,286	90,120	282,858	25,256	57,693	365,619	975,630
Northumberland,	19,150	21,026	120,336	243,966	30,854	20,862	289,436	512,944
Gloucester,	6,263	14,435	53,095	153,834	23,505	28,353	314,447	717,567
Restigouche,	3,330	6,566	46,517	77,534	6,420	10,984	66,131	189,501
	225,093	414,046	1,411,104	3,297,534	206,635	521,956	2,792,394	6,961,016

* There were no returns of the crops of Albert County in the census of 1851.

A comparison of these returns with those in the previous table shows not only a very much larger production of these four principal crops, (a proportionate increase occurs in all the other crops) but in the yield per acre. It will be noticed that this does not hold good of all sections of the province, in some of the counties the yield per acre of land cleared not being much different from what might be the natural variation per acre in any two given years. This is especially true of the Counties of St. John and Charlotte. In the case of almost all the other counties the yield per acre of cleared land has greatly increased. This is principally due to the fact that in the period between 1851 and 1881 the settlements extended upon the first class uplands, which in the first seventy years of the history of the province were rarely settled upon. It is also due in part to the closer attention paid to farming by the people. Formerly farmers, in the interior counties especially, gave much attention to lumber-

ing in the winter and their farms suffered in consequence. Work on the fields was delayed in the spring because the farmer was busy with his lumber. A small stock was kept because the men were not at home to look after the animals. The change in these respects of late years has been very great and with what result the census returns give evidence.



KING SQUARE, ST. JOHN, N. B.

A third cause, which is not to be overlooked, is the improvement in the means of internal and external communication, which has given every part of the province ready access both to domestic and foreign markets.

Another sign of the progress which agriculture has made is to be found in the extensive use of the improved farm machinery. In 1851 the farm implements for the most part were of the simplest kind, now mowing machines, horse rakes and other kinds of machinery are in almost universal use.

The size and style of finish of the farm-houses and other buildings, the improved character of the horses, cattle, sheep and swine, the added elegance of household appointments, which almost everywhere include a cabinet organ and a sewing machine, the presence on nearly every farm of a neat driving wagon, and the air of refinement, which is found remote from any of the towns and cities, all give evidence of the progress of New Brunswick agriculture.

In 1869 the Secretary of the New Brunswick Board of Agriculture made an estimate of the value of the cleared land, live stock and field products of the province, based upon the census of 1861. Such an estimate would necessarily not be absolutely accurate, but by taking the census returns of 1881, and the same values as those estimated on by the Secretary we will arrive at an approximation of the progress made in the twenty years. From this we learn that the value of the improved land in the province increased more rapidly than the population, the estimate showing a per capita increase of over 11 per cent. during the twenty years. The value of the live stock in the province was about the same per head of the population in 1881 as it was in 1861, but the value of farm products had increased 12 per cent. per head in the same period. It is evident, however, that due allowance ought to be made for improvements on land, which was already classed as improved in 1861, for the better class of buildings erected in the period between the compared years, and for the more general introduction of imported breeds of stock; so that these per-



centages do not give anything like a high enough estimate of the agricultural progress of the country. The aggregate increase of the value of farm produce in the thirty years was over 200 per cent.

CHAPTER XVIII.

MISCELLANEOUS.

THE JUDICIARY OF NEW BRUNSWICK.

The Judiciary of New Brunswick is modelled after that of England with such changes as are necessary to adapt it to the requirements of a new country or as experience has shown to be desirable.

The Supreme Court has jurisdiction over all causes civil and criminal, and is the Court of Appeal from inferior tribunals. From its decision an appeal lies to the Supreme Court of Canada and to the Judicial Committee of the Privy Council sitting at Westminster. The Supreme Court has jurisdiction both at Law and Equity. It consists of a Chief Justice and five puisne judges, one of the latter being called the Judge in Equity and being especially charged with the Equity business. One or more Courts of *Nisi Prius* are held every year in each county and the Court sits *en banc* four times a year. The salaries and travelling expenses of the judges are paid by the Dominion Government with which is also the right of appointment.

The County Courts have jurisdiction in actions of contract to $400, in actions of tort to $200, and in criminal matters they have concurrent jurisdiction with the Supreme Court, except in capital offences. The province is divided into six districts with a judge for each district. Two or more sittings of the County Court are held in each county every

year. These judges are appointed and paid by the Dominion Government.

In all the cities and towns are local courts of limited jurisdiction, and in each parish are one or more commissioners having jurisdiction in contract cases to $80 and in tort to $32. Justices of the Peace have jurisdiction in contract to $20, in tort to $8, and in respect to criminal offences they have limited powers.

Trial by jury is provided for in all cases, but under certain circumstances, if the parties so desire, the jury may be dispensed with.

Admission as an Attorney of the Supreme Court is allowed after four years study with a barrister and after the applicant has passed an examination. Students holding a degree from a recognized college or university are admitted after three years study. Attorneys are called to the bar after one year's practice.

MILITARY ORGANIZATION.

The only military organization is the Militia and compulsory service is a thing unknown. Volunteer Companies of Militia are enrolled and are expected to perform certain requirements as to drill. The number of these companies is limited. A Military School is maintained at Fredericton by the Dominion Goverment. Members of the School corps enlist for three years' service.

THE NATIONALITY OF THE PEOPLE.

About one-sixth of the population of New Brunswick is of French extraction. They reside principally in Westmorland, Kent, Gloucester and Madawaska Counties; the population of the latter being nearly all French. The majority of the French people speak English, although among themselves they use French exclusively.

The Settlement of New Denmark consists exclusively of Danes, who number about 700.



TRINITY CHURCH, ST. JOHN, N. B.

There are several Indian villages, but the number of aboriginal inhabitants remaining in the country is comparatively small. They are an inoffensive race and have assumed the habits of their white neighbours. They represent three tribes, the Milicete, Micmac and Passamaquoddy.

In the centres of population there is a small proportion of people of African descent, and also a few representatives of other nationalities, but practically speaking, all the people of New Brunswick, except the French, are of English, Scotch or Irish decent.

THE RELIGION OF THE PEOPLE.

There is no State Church in New Brunswick, all denominations being equal before the law.

The Anglican church has a Bishop, whose See is Fredericton, a Coadjutor Bishop and seventy-three clergymen. Its governing bodies are the Diocesan Church Society and the Diocesan Synod.

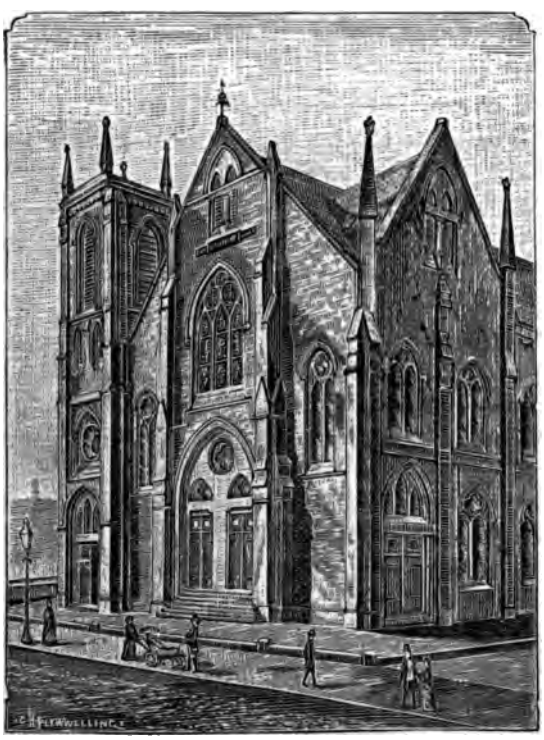
The Baptist church (Calvinist), have eighty-five clergymen. For purposes of the local church government this denomination divides the province into three districts, governed respectively by the Eastern, Western and Southern Associations.

The Roman Catholics divide the province into the Diocese of St. John and the Diocese of Chatham. They have two Bishops and eighty-nine Clergymen. They maintain besides numerous church and eleemosynary societies and Memramcook College, already referred to, a hospital known as the Hotel Dieu, at Chatham, and convents and academies at St. Basil, Madawaska County; at Newcastle, Northumberland County; at Bathurst, Gloucester County; at St. Louis, Kent County; at Caraquet, Gloucester, and at St. John.

The Methodists have eighty-one Clergymen. The governing body of this church is the Conference of New Brunswick and Prince Edward Island, subject to the supervision of the

General Conference of Canada. The educational institutions maintained by this denomination have already been referred to.

The Free Baptists have forty-three Clergymen. Their governing body is a General Conference. In educational matters they co-operate with the Calvinist Baptists.



ST. DAVID'S CHURCH, ST. JOHN, N. B.

The Presbyterians have thirty-seven Clergymen. They divide the province for the purpose of government into the Presbytery of St. John and the Presbytery of Miramichi.

The Congregationalists have several churches in New Brunswick.

THE NEWSPAPERS.

New Brunswick is well supplied with newspapers. Following is an alphabelical list of the several publications:—

NAME.	PLACE OF ISSUE.	HOW OFTEN ISSUED.
Advance,	Chatham,	Weekly.
Advocate,	Newcastle,	Weekly.
Bay Pilot,	St. Andrews,	Weekly.
Capital,	Fredericton,	Weekly and Tri-weekly.
Carleton Sentinel,	Woodstock,	Weekly.
Chignecto Post,	Sackville,	Weekly.
Courier,	St. Stephen,	Weekly.
Courier Provinces Maritime,	Bathurst,	Weekly.
Christian Visitor,	St. John,	Weekly.
Gleaner,	Fredericton,	Tri-weekly and Weekly,
Globe,	St. John,	Daily and Weekly.
Maple Leaf,	Albert,	Weekly.
Maritime Farmer,	Fredericton.,	Weekly.
Moniteur Acadian,	Shediac,	Weekly.
Observer,	Harvey,	Weekly.
Press,	Woodstock,	Weekly.
Religious Intelligencer,	St. John,	Weekly.
Reporter,	Fredericton,	Semi-Weekly.
Royal Gazette,	Fredericton,	Weekly.
Sun,	St. John,	Daily and Weekly.
Telegraph,	St. John,	Daily and Weekly.
Times,	Moncton,	Daily and Weekly.
Transcript,	Moncton,	Daily and Weekly.
World,	Chatham,	Semi-Weekly.

THE BANKS.

The following banks are established in New Brunswick.

The Bank of New Brunswick—capital $1,000,000—head office St. John. Hon. J. D. Lewin, President, G. A. Schofield, Manager, W. Girvan, Cashier.

The Maritime Bank of the Dominion of Canada—capital $321,900—head office at St. John, with branches at Fredericton and Woodstock. Thomas Maclellan, President.

The People's Bank—capital $100,000—head office at Fredericton. A. F. Randolph, Manager, J. W. Spurden, Cashier.

The St. Stephen's Bank—capital $200,000—head office at St. Stephen. W. H. Todd, President, John Grant, Cashier.

The following banks have agencies in New Brunswick.

Bank of British North America—capital £1,000,000—head office London, England; branches in New Brunswick at St. John and Fredericton.

Bank of Montreal—capital $12,000,000—head office at Montreal; branches in New Brunswick at St, John, Moncton and Chatham.

Bank of Nova Scotia—capital $1,000,000—head office at Halifax; branches in New Brunswick at St. John, Moncton, Woodstock, Newcastle, Chatham, Campbellton, Fredericton, Sussex and St. Stephen.

Halifax Banking Company—capital $500,000—head office at Halifax; agencies in New Brunswick at St. John, Sackville, Hillsboro, and Petitcodiac.

Merchants' Bank of Halifax—capital $1,500,000—head office, Halifax; agency at Bathurst.

There are several private bankers, the principal being the house of T. Maclellan & Co., St. John.

PRICE OF ARTICLES.

The following list of the prices of the several farming implements and other articles named therein is from the price list of a leading foundry in the Province. A dollar is equal to a little more than 4 shillings sterling.

Mowing Machines,	$ 75	
Horse Rakes,	20	
Reapers,	100	@ $110
Steel Plows,	16	" 20

Threshing Machines,	$225	@	$350
Fanning and Cleaning Machines,	25	"	40
Broadcast Drill Sower,	75	"	110
Self-Binder and Reaper,	275	"	340
Small Cultivator,	5	"	9
Cast Iron Plows,	8	"	11
Double Mouldboard Plow,	17	"	20
Horse Hoe,	10	"	13
Tedder,	60	"	85
Horse Pitchfork,	14	"	28
Iron Harrows,	16	"	28
Hay Press,	75	"	350
Cooking Stoves,	15	"	26
Hall "	4 50	"	20
Parlor "	7 50	"	16
Farmers' Boilers and Fittings,	17		

Horses suitable for farm work can be bought at from $100 to $150, good cows are worth from $16 to $30, and sheep from $2.50 to $4. Riding carriages for one horse from $100 to $250. Farm wagons $50. Single driving harness $25 to $40. Working harness (double) $20 to $50. Farming implements such as scythes, rakes, hoes, etc., are cheap and well made. A new settler will do well to bring little with him excepting his personal luggage, such as clothes and the like.

BEGINNING A FARM.

When a settler goes upon a new farm he will, in most cases, find the forest upon it unbroken. In rare instances there may be a small clearing where a logging camp has been, but in the great majority of cases he will find the great hardwood trees standing on all parts of his lot, interspersed more or less thickly with spruce, fir and, in most places, cedar. He can hire men who will cut down as much of this forest as he wishes, burn off the cut trees, and prepare the land for a crop for $12 per acre. Of course if he does part of the work himself the cost will be less. The trees



CITY BUILDING.
St. John, N. B.



ST. JOHN POST OFFICE.



ODD FELLOWS' HALL.
St. John, N. B

are cut at a convenient height above the ground, the branches trimmed off, and the trunks cut up so that they will be readily handled after the first "burn." In localities where there is a demand for "cordwood" for fuel, the trunks and larger limbs may be cut up for this purpose. In the fall or spring, as the case may be, when the cut trees have become sufficiently dry and the weather is favorable, fires are set in the bush heaps and the "fallow," as it is called, is burned over. If the "burn" is a good one, nothing will be left but the stumps and larger portions of the trees. The latter are rolled together, piled up and burned, and the ashes scattered. The stumps are not removed. The land is now ready for a crop, and its yield is usually surprising. Most beginners will sow wheat or oats over the greater part of their clearing and seed down to grass, and allow the field to remain in grass until the stumps become easy to remove, when it may be plowed up, and its fertility will be found fully equal to what it was when the land was first cleared. The clearings may be added to every year.

In the matter of buildings the settler will consult his pocket and his taste. Most of the early settlers were compelled to build log houses, and many yet build them from choice. They are made by laying the logs upon each other, notched so as to fit closely, the interstices being filled with moss and clay or mortar. The interior may be finished by simply planing the logs smooth, or may be lathed and plastered if desired. Such houses are warm and cheap, and by no means unsightly. Log barns may also be erected. Of late years, or where roads are made in advance of settlements, so that manufactured lumber can be got to the new farms, many settlers build themselves snug framed cottages and framed barns. This is a matter which every settler, going upon a farm, will decide for himself after he has come to the country. In any case he can provide himself with comfortable buildings at a very reasonable price.

NEW BRUNSWICK AT THE COLONIAL EXHIBITION.

The province of New Brunswick was fortunate in being officially represented at the great Colonial and Indian Exhibition by a gentleman long experienced, not only in exhibition matters, but in trade and immigration questions. Mr. Ira Cornwall, who had for some years represented the province as agent general in Great Britain, on being appointed to the post, put his whole heart into the work, and when the Exhibition closed it was recognized by those best able to judge that no province of Canada had been more persistently kept before the people of Great Britain, and none had its advantages more attractively brought out on every special occasion that presented itself. He never spared himself when work was to be done or information to be imparted to visitors concerning his province or the Dominion at large; and when after six months of incessant labor the exhibition closed, he made a fitting and characteristic conclusion to his work by giving a public dinner cooked from the cheaper New Brunswick food products to the poor children of the Southwark London schools. It served the double purpose of a treat to hundreds of poor children and a practical exhibition to Londoners of what a variety of wholesome dishes might be prepared from the very cheapest of Canadian food products; and created a marked impression on those before whom the demonstration was given. That this work, so thoroughly done without the expectation of financial reward, has had far reaching results to the province is evident from the following extract from the last report of Mr. C. H. Lugrin, the Provincial Secretary of Agriculture:

> I am glad to be able to report that the interest stimulated in the Province by the exhibit of our products at the Colonial and Indian Exhibition, as well as by the judicious circulation of the New Brunswick Handbook, first by Mr. Cornwall, formerly agent of the Province in Great Britain, and afterwards by Mr. James I. Fellows, at present agent of the Province there, continues. Quite a large number of persons have been in correspondence with me with the view of emigrating to the Province, principally men of capital.

The Province contributed over 100 exhibits to this exhibition, among which the exhibits of the wonderful woods of New Brunswick were naturally prominent.

MISCELLANEOUS ITEMS.

Reliable estimates give the quantity of long lumber sawed by the mills of the St. John in 1888 at 166,000,000 feet, besides large uantities of laths, pickets, shingles, staves, shooks, etc.

In the decade of 1870-80 the increase in the population of New Brunswick was triple that of the neighboring American province of Maine.

The business of picking blueberries that grow wild in New Brunswick is growing into large proportions, and they are now shipped canned, and in the natural state, to places as far away as the Southern States. One firm at Chatham shipped to the States, in 1888, eight carloads, valued at $12,800; while from Aroostock Junction, strawberries, blueberries, and raspberries were shipped to the value of $23,000.

The town of St. Andrews, N. B., is the birthplace of the first railway project in the British American provinces, and one of the first on the continent. In 1827, two years after Stephenson's first railway was opened in England, John Wilson proposed a road from St. Andrews to Quebec, and in 1828 called a public meeting on the subject.

"The result," writes a correspondent of the *Empire*, "was the launching after a few years delay of the St. Andrews and Quebec Railway Company, to build a road between these places across the territory subsequently ceded to the State of Maine by the Ashburton Treaty. English capital was freely subscribed, provincial aid was given to some extent, and work was begun, with this result: that everybody who put any money into the enterprise lost it; and the first intercolonial railway terminated in a cul-de-sac."

Meantime, a scheme was proposed, long in anticipation of the Canadian Pacific, to cross the continent by a railway from St. John through the upper provinces, and a portion of the road under the name of the "European and North American Railway" was built from St. John to Shediac.

In addition to the railways mentioned on pages 118 to 122 of the New Brunswick section of this work, the following lines have been constructed or are in process of being built: Moncton and Buctouche, completed, 30 miles in length; Sackville and Cape Tormentine from Sackville on the I. C. R., to Cape Tormentine to communicate by steamer with P. E. Island, completed, 30 miles long; Kent Northern, being built, and Albert Southern extended to Alma, 12 miles; Fredericton to Woodstock being built, 63 miles; Tobique Valley Railway, 30 miles, under construction. The following roads have been chartered and surveyed: York and Carleton, 90 miles; Restigouche and Victoria, 100 miles; Centreville, 22 miles; Foreston, 30 miles; St. Francis, 40 miles; St. John Valley, 60 miles; and Hampton River to Moncton, (charter applied for).

The New-Brunswick Government gives the exclusive right to dig coal, and any minerals, except gold, silver, copper and lead, to the persons on whose property it is found, on the owner obtaining at a nominal fee a license from the Government, the license giving exemption from royalty for five years. They also offer a reward to the discoverer of a bed of rock salt.

Fresh timber licenses covering 26,678 acres were granted by the provincial government in 1887. In the same year Mr. Jack, the Deputy Provincial Surveyor, explored the head waters of the Renous and Dungarvon rivers, where he discovered immense new tracts of land heavily timbered with pine, spruce, etc. The quantity that could be floated down the head streams is estimated at 200,000,000 feet. He found many beautiful lakes not on the present maps, these lakes and streams abounding in fish; and caribou, beaver, bear, otter and mink being numerous in the adjacent country.

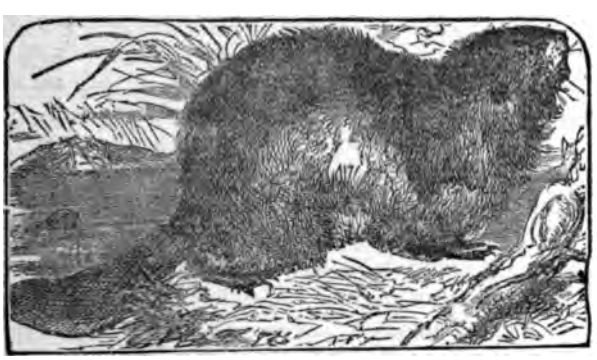
The Inspector of Fisheries, in his annual report for 1887, remarks that "New-Brunswick offers better inducements to the angler than any other portion of America, and every year increased numbers are visiting the rivers."

A "public health act" was passed in 1887, under which the province has been divided into 25 districts, each having a local board of health.

The report of the Superintendent of Education for 1887 shows that the province has 68,583 pupils enrolled in the public schools, with 1567 teachers in charge of the schools. The number of trained teachers far exceeds that of any previous year. Only a year or two previous, there were nearly 500 schools in charge of "local licensees"—persons without previous training or experience, while this year there was not a single school in an English speaking district under the charge of any other than a trained teacher.

In March of this year a public meeting of the citizens of St. John and Portland was held, when by a larger majority resolutions were carried in favor of the union of the two cities, under the name of St. John. This increases the population from about 26,000 to 45,000 or 50,000, thus making St. John the fourth city in the Dominion in population.

The first vessel known to have been built in New Brunswick was a schooner constructed in 1770 by Jonathan Leavitt. Wm. Davidson, the first British settler on the Miramichi, built a large schooner in 1773 and named it after that river; and two years after, James Simonds built the first vessel at St. John. These were the beginnings of the ship building trade in which this province led the world, till iron vessels began to revolutionize the trade. In the year 1864, no less than 163 new vessels with an aggregate of 92,605 tons were built in the province, and the total built from 1825 to 1888 inclusive was 5,880 vessels with a total of 2,199,245 tons. Notwithstanding the decline of wooden ships in favor of iron ones, there are at present about 2,000 men employed in St. John and vicinity in building ships and ship materials.



CANADIAN BEAVER.



SECTION IV.

PRINCE EDWARD ISLAND.



PRINCE EDWARD ISLAND.

Prince Edward Island, the smallest of the Provinces of the Dominion of Canada, is situated on the southern part of the Gulf of St. Lawrence, and is separated from Nova Scotia and New Brunswick by the Strait of Northumberland, which varies from seven to thirty miles in width. This Island was discovered by Sebastian Cabot, on St. John's Day, 24th June, 1497, and was called by him the Island of St. John, which name it bore until 1799, when, out of complimentto the Duke of Kent, the father of Queen Victoria, at that time Commander of the forces in Halifax, it was changed, by an Act of the Colonial Legislature, to that of Prince Edward Island.

It existed as a separate Government from the 1st May, 1769, to 1st July, 1873, when it became a Province of the Dominion of Canada. It was not, however, until the 7th July, 1773, that the General Assembly met, under Walter Patterson, its first Governor. Responsible Government was conceded in 1851, since which time the Executive has been distinctly recognized as responsible to the Legislature. The Government is administered by a Lieutenant Governor, appointed by the Dominion Government, assisted by an Executive Council of nine members of the Legislature. The other branches are the Legislative Council of thirteen members, and the House of Assembly of thirty members. The system of Government is the same as in the other Provinces of the Dominion, except that the Legislative Council is elective. The Island is divided into three counties, each of which elects four councillors (Charlottetown returning one additional) and ten representatives to the Lower House. There is no property qualification for members of the Legislative Council; for its electors the qualifications are full age, and the occupation of property to the value of $325. The property qualification of a member of the House of Assembly is the possession of freehold or leasehold estate to the value of $163, over and above all encumbrances. The qualifications of electors for the Lower House are full age, a residence of twelve months, and the performance of two day's labour on the roads, or the payment of seventy-five cents commutation money. The Island is represented in the Dominion Parliament by four Senators, and six members of the House of Commons.

The Revenue, which, during the last three years, has averaged about $254,000, is derived from subsidy allowed by the Dominion Government, moneys arising from the sale of Government lands, fees, &c, (the Provincial Government levies no taxation), and is applied to education, the administration of justice, the maintenance of Public Works and buildings, and of the Executive Government.

Seen from the water, the appearance of Prince Edward Island is exceedingly prepossessing. On approaching the coast, the country affords a charming picture of cultivated and well wooded land, with villages and cleared farms dotted along the shores, and by the sides of the bays and rivers. The Island, although generally level, is in many parts beautifully undulating, and rises here and there to an elevation never exceeding 500 feet above thesea. The conformation of the Island is good, and the scenery very much resembles that of England, and thickly scattered, flourishing homesteads indicate a degree of prosperity rarely met with in a new country. In shape it takes the form of an irregular crescent, concave towards the north, measuring in length 150 miles, and being deeply indented, at many points, by large bays and inlets, it varies in width from four to thirty miles. It contains an area of 2,133 square miles, equal to 1,365,400

acres, and its population at the last census (1881) was 108,891 as compared with 94,021 in 1871. The following abstract shows their religion and nationality :—

Roman Catholics	47,115	
Presbyterians	33,835	
Methodists	13,485	
Church of England	7,192	
Baptists	6,236	
Various	1,028	108,891
Scots	48,933	
Irish	25,415	
English	21,404	
French	10,751	
Indians	281	
Others	2,107	108,891

The present population is probably about 119,000.

Communication with the mainland is maintained, during the period of ordinary navigation, by a line of steamers connecting daily with ports in Nova Scotia and New Brunswick, and thus with the various railway systems of Canada and the United States. Freight and passenger steamers connect weekly with Quebec, Montreal, St. John's, Newfoundland, Halifax, Boston and New York, while, during the shipping season, opportunities occur of direct freights by steamer to British ports.

Ordinary navigation generally closes about the middle of December, and re-opens about the middle of April. During this time communication is carried on with the mainland by a steamer specially constructed for a winter navigation. The various efforts in this direction can so far, however, be regarded as experimental only, the difficulties attending it not having been fully surmounted. This service is supplemented by boats which cross to New Brunswick at the "Capes" a distance of nine miles. Branch railways have recently been constructed to Cape Traverse on the Island, and to Cape Tormentine in New Brunswick, and there is no doubt that a permanent connection will be established between these two points, and that communication during winter will, ere long, be accomplished with but little difficulty.

A subway has been proposed to connect the Island with the railway systems of the other provinces, and the matter is fairly before the Dominion Government, its complete practicability having been favourably reported on by many leading engineers. Surveys and borings have been made by which the bottom of the straits has been shewn to be perfectly suitable to the enterprise.

The following table gives the distances from some of the principal cities of Canada and the United States and the length of time at present required to make the journey :—

	Miles.	Hours.
Charlottetown to Halifax, Nova Scotia	160	12
" " St. John, New Brunswick	200	12
" " Quebec	600	35
" " Montreal	800	48
" " Ottawa	960	53
" " Boston, Massachusetts	600	36
" " New York	850	44

A line of railway traverses the Island from Tignish, the western terminus, to Souris, the eastern, with branches to Charlottetown, Georgetown, and Cape Traverse, a total distance of 210 miles.

The adoption of the shorter route to New Brunswick, *via* Capes Traverse and Tormentine, either by means of the Sub-way before mentioned, or by ferry



steamers, would not only lessen the time of travel to the upper provinces, &c., but would give a greater impetus to trade, and to the passenger traffic in particular.

Mails are despatched daily to the Mainland, and weekly to Great Britain, while advantage is taken of intervening opportunities *via* New York. There are excellent postal facilities throughout the Province,—post offices being established at intervals of three or four miles, and of these there are 297, or one for every four hundred inhabitants.

There is direct telegraphic communication by submarine cable, and telegraph offices are established in all the principal towns and villages, and along the line of railway. In addition to this a Telephone Company, which opened an exchange in Charlottetown in 1885, has extended its operations into some parts of the country.

Besides the internal communication furnished by the railway, several small steamers and sailing packets, most of them subsidized, more or less, by the Government, offer means of coast and river transit. In the summer there is no more enjoyable trip than a sail, either to Crapaud or Orwell and back, by the Inland Navigation Company's steamer from Charlottetown, and a much better idea, and a nearer view, of the shore farms are obtained, than is possible from the Pictou boat.

One or more of the denominations mentioned in the population statistics have places of worship in almost every district.

Seven Newspapers are published in the Province, five of which are weeklies and two dailies, which latter issue weekly editions also; three of the former are located in Summerside, the remainder in the Capital, where, also, the Royal Gazette appears.

The people are, on the whole, contented and prosperous, and the farmers, though few of them can be called wealthy, constitute the most independent portion of the population. The amount to the credit of depositors in the Dominion Savings Bank on the 30th June 1887, was $2,305,535,09, or $19.37 for every man, woman and child in the Province. The amount on deposit in the five other banks doing business, as well as the capital invested in commercial ventures, which is very considerable, must also be taken into account.

The Law Courts of the Province consist of:—

1. Court of Chancery, of which the Lieutenant Governor is *ex-officio* Chancellor, and the judicial powers of which are exercised by a Master of the Rolls and Vice Chancellor.
2. Court of Divorce, of which the Lieutenant Governor and members of the Executive Council are Judges.
3. Supreme Court presided over by a Chief Justice and two Assistant Judges.

This court besides its sessions in Charlottetown sits, for the trial of civil and criminal suits, twice a year, both in Summerside and Georgetown, the chief towns of the other counties.

4. County Courts, of which there is one in each county, presided over by a Judge.

Each of these, which are for civil suits only, has five circuits distributed over the county.

5. Court of Probate of Wills, with one Judge.
6. Stipendiary Magistrates and Justices of the Peace.

CLIMATE.

The climate of Prince Edward Island is remarkably healthy. The cold is certainly more severe, and lasts for a longer period than in England, but the atmosphere is dry and salubrious, and the summer is of such brightness and beauty as amply to compensate for the winter. The weather generally becomes unsettled in the early part of November and sometimes sharp frosts, with falls

of snow take place about the middle of the month, the frost gradually increasing till the ground resists the plough, which is ordinarily about the second week in December. The cold then increases rapidly, and the ground is covered with snow. During the months of January and February the weather is usually steady with the thermometer on rare occasions falling to 15 degrees below zero of Fahrenheit. March, as in England, is a windy month, and is throughout very changeable. During the latter part of this month the snow rapidly melts, and the ice becomes rotten and dangerous for travel, and wholly disappears about the middle of April. Strong southerly winds now set in, and the last vestiges of frost speedily vanish. The spring is short, and in the beginning of June the summer bursts forth, and from this time to the end of September, the climate resembles that of the Southern coast of England. The thermometer, in calm weather indicates a greater degree of heat, but the sea breeze seldom fails to lower the temperature, so that little inconvenience arises from it. About the middle of September the autumn commences. The cold is neither so great in winter, nor the heat so intense in summer as in the western provinces of the Dominion, while the Island is almost entirely free from those fogs to which the neighboring provinces are subject. This exemption is accounted for by the fact that the waters which wash the shores of the Island do not come in immediate contact with those of a different temperature, and that Cape Breton and Newfoundland, both of which are high and mountainous, lying between it and the Atlantic, arrest the fogs, which would otherwise be driven from the banks to the Island.

The following table is compiled from the Official Meteorological Register at Charlottetown, kept by an officer of the department :—

	1878	1879	1880	1881	1882	1883	1884	1885	1886 30 June
Highest temperature	87·50	83·90	86·80	85 70	85·40	81·10	81·80	81·70	78 80
Lowest temperature..	—13·80	—17·90	—11·30	—15 00	—14·20	—16·30	—20·10	—16·50	—15·00
Mean of all highest temperatures.....	40·05	47·50	48·33	48·02	47·19	47 58	47·13	48·40	43·03
Mean of all lowest temperatures.....	36·01	32·20	32·47	32 99	31·65	31·07	30·93	31·82	26·55
Amt. of rain (inches)	32·467	25·127	24·245	29·119	26·733	30·70	39·07	30·61	12·648
Amt. of snow (inches)	93·60	170·06	146·10	147·75	212·90	123·31	137·45	114·70	64·74
Total precipitation....	41·71	42·018	38·585	43·894	48·023	42·74	53·54	42·08	19·122
No. of fogs observed.	13	16	19	21	8	15	20	15	2
Number of thunders.	7	9	18	11	9	8	7	4	—
Number of lightnings	8	14	23	14	11	9	13	6	—
Number of gales.....	21	19	19	16	24	17	23	20	9

LANDS.

For more than half a century what was known as the "Land Question" was, to use a phrase that has become historical, "a fruitful source of discontent." Now, happily, it is possible to write of our beautiful Island with merely a passing reference to this grievance, and to say that it no longer exists. Absentee proprietorship has been abolished, and the Provincial Government having purchased the interests of the landlords, has taken their place, not, however, for the purpose of exacting the annual rent from the tenants, but with the object

of making them owners of the freehold of the soil which they have redeemed from the wilderness. Of this immense advantage by far the greater majority of the tenants have availed themselves, to such an extent, indeed, that at the close of 1886, of the 76,700 acres actually remaining unsold of the 843,981, purchased by the Government, only about one-half represented land held by parties who had not yet commenced to buy. The remainder may be set down as the available uncultivated and vacant Government land. These consist of forest lands of medium quality, the very best having, of course, been taken up by the tenants in the first instance, and their price averages about one dollar per acre. Parties desiring to settle upon them are allowed ten years to purchase their holdings, by paying a deposit of not less than twenty per cent, of the whole amount, the remainder being divided into ten equal instalments payable annually, with five per cent interest on the balance left unpaid each year.

Although there is apparently little room for new settlers, yet Prince Edward Island is a desirable field for a certain class of immigrants, who, in search of a ready made farm, where they may have the social comforts of life within their reach, are prepared to pay a higher price rather than go westward. Such farms can be obtained in the Island, and various circumstances have contributed to place them in the market. The desire for change, and to see the world on a larger scale than is afforded them at home, has led many of the youth to the great North-West, and to the busier life in the large cities of the United States. The adoption of other pursuits has also, in some cases, deprived the farmer of the assistance of his sons, and, having himself acquired a competency, he is often anxious to sell and remove into town. Others, again, have been unfortunate, and are burdened with debts, of which they desire to relieve themselves and start afresh. The price of such land varies much according to its quality, situation, and buildings, but, with good buildings, a farm of 100 acres can be obtained from $20 to $35. (£4. to £7.) an acre. Facilities for travel and transportation are excellent, the roads are good, and few farmers are as much as six miles from a shipping place for their surplus produce. All the necessaries of life can be had at very low rates. Labour saving machines of the most approved kinds can be purchased or hired without any difficulty, the competition in this branch being very keen.

SOIL, CROPS, &c.

The Island is noted for the fertility of its soil, and it may confidently be asserted that, with the exception of a few bogs and swamps composed of a soft spongy turf, or a deep layer of wet black mould, the whole Island consists of highly valuable cultivable land. The soil, which is well watered with numerous springs and rivers, is formed for the most part of a rich layer of vegetable matter above a bright loam, resting upon a stiff clay and sandstone; the land, in its natural state, being covered with timber and shrub of every variety. The underlying rock through the main part of the Island, belongs to the upper Permian, capped about New London and Cavendish, with a triangular section of Triassic of considerable size; but in Prince County, west of Summerside, where the denudation has been greater, the lower Permian comes to the surface. All kinds of grain and vegetables grown in England ripen here in great perfection. The principal crops raised are wheat, oats, barley, potatoes and turnips, of which oats and potatoes are exported in very large quantities. Mr. J. P. Sheldon, Professor of Agriculture at the Wilts and Hants Agricultural College, Downton, near Salisbury, who visited the Island in 1880, thus writes of it:— "In some respects this is one of the most beautiful Provinces in the Dominion, and it has probably the largest proportion of cultivable land. The soil generally is a red sandy loam, of one character throughout, but differing in quality. On the whole, the grass land of the Island and the character of the sward, consisting as it does of indigenous clovers and a variety of finer grasses, reminded me strongly of some portions of old England. The people, too, are more English in appearance than

those of any other of the Provinces, with the exception of New Brunswick. This is probably owing to a cooler climate, and the contiguity of the sea. Prince Edward Island is covered with a soil that is easy to cultivate, sound and healthy, capable of giving excellent crops of roots, grain and grass—an honest soil that will not fail to respond to the skill of the husbandman. The Island grows very good wheat, and probably better oats than most other parts of the Dominion. Of the former the crops are from 18 to 30 bushels and of the latter 25 to 70 bushels per acre. Barley, too makes a very nice crop. Wheat, at the time of my visit, was worth 4s. per bushel of 60 lbs.. oats 1s. 9d. per bushel of 34 lbs and barley 2s. 6d. to 3s. per bushel of 48 lbs. The Island is noted for its large crops of excellent potatoes, which not uncommonly foot up to 250 bushels an acre of fine handsome tubers. Swedes make a fine crop, not uncommonly reaching 750 bushels per acre of sound and solid bulbs."

The following table gives the yield per acre and present prices :—

	Wt per bushel.	Bushels.	VALUE.	
			Decimal.	Sterling.
Wheat	60 lbs.	18 to 30	$0·80 to $1·00	3s. 4d. to 4s. 2d.
Oats	34 "	40 to 60	0·24 to 0·30	1s 0d. to 1s 3d.
Barley	48 "	30 to 45	0·50 to 0 60	2s. 1d, to 2s, 6d.
Potatoes	60 "	150 to 300	0 18 to 0·3)	9d. to 1s. 3d.
Turnips	60 "	400 to 1000	0-12 to 0 16	6d. to 8d.

In addition to the natural fertility of the soil, the great facility for obtaining manure may be set down as one of the principal advantages. In most of the bays and rivers are found extensive deposits of mussel mud, formed by decayed oyster, clam and mussel shells. These deposits vary from five to twenty feet in depth, and their surface is often several feet below low water level. Machines placed upon the ice, and worked by horse power, are used for raising this manure, which is then carried off by sleds and distributed over the fields while the covering of snow still remains. Procured in this way, in large quantities, and possessing great fertilizing qualities, it has vastly improved the agricultural status of the Island. An eminent authority Sir J. W. Dawson, F.R.S. C.M.G., Principal and Vice Chancellor of McGill University, Montreal, says: "The great wealth of Prince Edward Island consists in its fertile soil, and the preservation of this in a productive state is an object of imperative importance. The ordinary soil of the Island is a bright, red loam, passing into stiff clay on the one hand, and sandy loam on the other. Naturally, it contains all the mineral requisites for cultivated crops, while its abounding in peroxide of iron enables it rapidly to digest organic manures, and also to retain well their ammoniacal products. The chief natural manures afforded by the Island, and which may be used in addition to the farm manures to increase the fertility of the soil, or restore it when exhausted, are (1) *mussle mud*, or oyster shell mud of the bays. Experience has proved this to be of the greatest value. (2) *Peat* and *marsh mud* and *swamp soil*. These afford organic matters to the run out soil, at a very cheap rate. (3) *Seaweed*, which can be obtained in large quantities on many parts of the shores, and is of great manurial value, whether fresh or composted. (4) *Fish Offal*. The heads and bones of cod are more especially of much practical importance, (5) *Limestone*. The brown earthy limestones of the Island are of much value in affording a supply of this material, as well as small quantities of phosphates and alkalies. Where manures require to be purchased from abroad, those that will be found to produce the greatest effects are those capable of affording phosphates and alkalies, more especially bone earth, superphosphates of lime and guano ; but when fish offal and seaweed can be procured



in sufficient quantity, or when good dressings of the oyster deposit are applied, these foreign aids may well be dispensed with, at least for many years." Of this deposit Professor Sheldon speaks as follows: "The Island possesses one advantage which is unique and very valuable. I refer now to its thick beds of "mussel mud" or "oyster mud" which are found in all bays and river mouths. The deposit, which is commonly many feet thick, consists of the organic remains of countless generations of oysters, mussels, clams, and other bi-valves of the ocean, and of crustaceous animals generally. The shells are generally more or less intact, embedded in a dense deposit of mud-like stuff, which is found to be a fertilizer of singular value and potency. The supply of it is said to be almost inexhaustible, and it is indeed a mine of wealth to the Island. A good dressing of it restores fertility in a striking manner to the poorest soils—clover grows after it quite luxuriously, and, as it were, indigenously—by its aid heavy crops of turnips and potatoes are raised, and, indeed, it may be regarded as a manure of great value, and applicable to any kind of crop. Nor is it soon exhausted, for the shells in it decay year by year, throwing off a film of fertilizing matter."

Of late considerable improvement has been made in raising farm stock. The Horses of the Island enjoy a high reputation, much attention having been bestowed on their breeding. Owing to early Government importations of thoroughbred and cart stallions, which have, more recently, been followed by many private importations, the horses of Prince Edward Island are now regarded as among the best in America, and command ready sale at good prices. Clydesdales, Shire horses, Percherons and Standard Bred Trotters are the breeds generally raised. For sheep also the Island is especially suited, the mutton being of a very fine flavour, and the export of sheep and lambs to the other provinces and the United States is assuming very large proportions. The Shropshire Downs, Leicesters and Cotswolds are favourite breeds. The increased quantity and superior quality of the fodder caused by the application of mussel-mud to the land, has also produced great improvement in the quality of Cattle. Pure bred herds of Short Horns, Ayrshires, Jerseys, Holsteins, Galloways and Guernseys are raised in the province, and are used in improving the native stock. The Provincial Government maintains a Stock Farm, which is devoted to the breeding of horses, cattle, sheep and swine. The yearly surplus stock is distributed between the three counties. The extraordinary ease and abundance with which turnips, potatoes, oats and barley are raised, added to the excellence of the hay crop, marks Prince Edward Island as a country rarely well adapted for cattle feeding. The importation of store cattle from the adjoining provinces, for feeding during the winter, is now being undertaken, and, it is believed, will prove remunerative. This system of farming if generally adopted will be found much more satisfactory than the sale of the more bulky products.

On these points Professor Sheldon writes: "For sheep, particularly, the Island appears to be well adapted, for the soil is light, dry, and sound, growing a thick set, tender, and nutritious herbage. For cattle, too, it is suitable, though, perhaps, less so than for sheep.

"For horses the Island has been famous for a long time, and American buyers pick up most of those there are for sale. It is not improbable, in fact, that, taking them for all in all, the horses of the Island are superior to those of any other province; it seems to be, in a sense, the Arabia of Canada. The sheep, as a rule, are fairly good, but open to improvement."

The following table shows the principal farm productions of 1880, compared with those of 1870, as extracted from the census:—

Articles.	1871.	1881.	Increase.	Decrease.
Bushels Wheat	269,392	546,986	277,594	
" Oats	3,120,576	3,538,219	418,363	
" Barley	176,441	119,368		57,073
" Buckwheat	75,109	90,458	15,349	
" Peas and Beans	1,325	3,169	1,844	
" Potatoes	3,375,726	6,042,191	2,666,465	
" Turnips	395,358	1,198,407	803,049	
" Other roots		42,572		
" Timothy and Clover Seed	11,864	15,247	3,383	
Tons of Hay	68,349	143,791	75,442	
Lbs. " Butter	981,939	1,688,690	706,751	
" " Cheese	155,223	196,273	41,050	
" " Maple Sugar		25,098		
" " Tobacco		1,367		
" " Hops		10,209		
" " Wool		552,083		
Yards home-made Cloth	428,313	514,682	86,369	
" " Linen		30,088		
Bus. Apples, Grapes, &c		34,843		

We may here give another extract from the census of 1881 which contains interesting statistics :—

Number of owners of land	16,663
" occupiers of land	13,629
" acres of land occupied	1,126,653
" " improved	596,731
" Horses owned	31,335
" Horned cattle owned	90,722
" Sheep owned	166,496
" Swine owned	40,181
" Vessels owned	267
" Tanneries	36
" Curling Mills	25
" Grist and saw mills	280
" Limekilns	176
" Cloth factories	9
" Printing offices	12
Shipyards	20

On comparing these. and other returns from the Island, with those from the remainder of the Dominion, (omitting of course the North-West Territories) we gather the following :—

One half of the area of Prince Edward Island is cultivated.

Only one twenty-fifth of the other Provinces is cultivated.

Prince Edward Island has a population of 51 to the square mile.

The other Provinces only 4·72.

Prince Edward Island owns 55 animals of live stock for every 100 acres of improved land.

The other Provinces only 38.

In field products, Prince Edward Island raises, to the acre of improved land, 108¾ bushels.

The other Provinces only 61¼ bushels.

From the Fisheries Prince Edward Island produces $17.08, per head, value.

The other Provinces $3.55.

Exhibitions of live stock, farm, garden and dairy products, and manufactures, are, and have been, for a number of years, of annual occurrence. Great public interest is taken in these shows, and the Provincial Exhibition, held in Charlottetown, although only supported by a small public grant, is, from an agricultural point of view superior to any annual Show of the kind in Eastern Canada.

FISHERIES.

Prince Edward Island is, without doubt, the best fishing station in the Gulf of St. Lawrence, but the habits and feelings of the inhabitants are so decidedly agricultural, that the fisheries have not received from them the attention which they deserve. They consist chiefly of mackerel, lobsters, herring, cod, hake and oysters, while salmon, bass, shad, halibut and trout, are caught in limited quantities. Their value may be appreciated from the fact that, during 1882, there were taken from the sea 16,000,000 lbs. weight of fish food, and 107,250 lbs. from the running waters, besides 5,500,000 of edible fish used as bait. In other words, there were taken, at the lowest calculation, for food 8,000,000 of mackerel, 6,000,000 of herring, and 10,000,000 of cod and hake, 3,000,000 of oysters, and 22,000,000 of lobsters besides other fish.

The Dominion Fisheries Report for 1886 gives the following statement for the Province :—

Kinds of Fish.	1886.	
	Quantity.	Value.
		$ cts.
Cod ..... cwt.	12,850	51,400,00
Ditto, boneless ..... lbs.	35,790	2,147,40
Herring ..... Brls.	43,204	129,612,00
Mackerel ..... Brls.	27,534	275,340,00
Ditto, preserved ..... Cans.	679,584	67,958,40
Haddock ..... lbs	71,550	4,293,00
Hake ..... cwt.	9,530	28,590,00
Salmon, fresh ..... lbs	2,440	366,00
Alewives ..... brls.	700	2,100,00
Halibut ..... lbs	9,680	580,80
Bass ..... "	200	12,00
Trout ..... "	75,195	4,511,70
Smelts ..... "	74,100	4,446,00
Eels ..... "	150,650	9,039,00
Shad ..... "	750	45,00
Oysters ..... brls.	33,125	99,375,00
Lobsters, preserved in cans ..... lbs	3,616,780	434,013,60
Cod and Hake sounds ..... "	20,580	12,348,00
Fish oil ..... galls.	14,997	7,498,50
" manure ..... tons	3,315	3,315,00
Fresh fish local consumption	.....	5,000,00
		$1,141,991.40

The oyster fishery of the Island is extensive and annually increasing, and though many of the shells seem very coarse and heavy, to any one accustomed to the "London Natives," yet the coarseness is all on the outside, and no more



delicate morsel can be extracted from those celebrated bivalves, than from those of *our own* native growth. The following Census statistics compare the fisheries of 1880 with those of 1870 :—

	1870.	1880.	Increase.
Vessels and boats employed	1,183	2,729	1,546
Men do	1,646	5,792	4,146
Quintals of cod, haddock, hake and pollock caught	15,649	26,392	10,743
Barrels of herring and gasperaux	16,831	22,457	5,626
Barrels of mackerel	16,047	91,792	75,745
Barrels of other fish		706	
Barrels of oysters		175,408	
Lbs. of canned lobsters	6,711	3,275,316	3,268,605

It will be seen by comparing the above table with that from the Fisheries Report, 1886, that 1880 was a very exceptional year with regard to mackerel, and it may as well be observed with regard to oysters, that, while the Fishery table quoted gives the quantity *shipped*, this, from the Census, gives the quantity *caught*, thus including those for home consumption.

Apart, altogether, from their direct value, financially and industrially, to the province itself, the Island waters are of immense importance, far transcending their mere extent. The mackerel fisheries, in what is known as the North Bay of the Island, are considered, by competent authorities, worth more than those on all the other eastern coasts of the Dominion put together.

EXPORTS.

The volume of exports from the Province is very large, and few, even of the residents of the Island, are aware of the quantities of products annually shipped to other countries, and of the sum of money returned to the people therefor. The following table, which has been compiled from the Customs entries, show their value for the year ended 30th September, 1883, to have been about three millions of dollars, more than double that of the year 1871 :—

COMPARATIVE STATEMENT

OF THE VALUE OF THE EXPORTS OF THE PRODUCTS OF PRINCE EDWARD ISLAND FOR THE YEARS ENDED RESPECTIVELY, 31ST DECEMBER, 1871, AND 30TH SEPTEMBER, 1883.

ARTICLES.	1871.		1882-3.	
	QUANTITIES.	VALUE.	QUANTITIES.	VALUE.
Oats	1,229,174 bush's.	$ 511,635	1,525,000 bush's.	$ 610,000
Barley	28,030 "	18,665	11,000 "	8,000
Wheat	31 "	55		
Flour and Meal		9,900	Oatmeal	1,500
Potatoes	355,048 "	99,844	1,345,000 "	336,500
Turnips	25,870 "	4,560	33,000 "	6,600
Other Vegetables		277		5,400
Starch			2,140,000 lbs.	64,500
Hay	338 tons	5,392	380 tons.	5,500

ARTICLES.	1871.		1882–3.	
	QUANTITIES.	VALUE.	QUANTITIES.	VALUE.
Seed	678 bus.	790	1,000 bus.	2,000
Pork		125 600		272 500
Beef and Mutton		4,130		16,500
Preserved Meat				104,000
Lard and Tallow		5,334		17,000
Preserved Fish		11,770		470,000
Mackerel		147,085		200,000
Oysters	9,490 bbls.	12,683	18,100 bbls.	30,000
Dried Fish		57,181		17,000
Other Fish		25,032		32,000
Fish Oil		2,061		1,000
Poultry		1,440		3,000
Eggs		88,313		220,000
Butter	178,451 lbs.	26,930	81,235 lbs.	17,500
Cheese	66 lbs.	12	97,225 lbs.	12,500
Horses	422	39,530	1,536	170,000
Cattle	523	12 ,21	1,776	60 000
Sheep	5,292	17,200	12,539	40,000
Swine	368	1,105	180	1,000
Hides and Skins		11,700		66,000
Leather		1,000		24,000
Wool	40,746 lbs.	13,120	57,295 lbs.	14,500
Woollen Cloth				12,500
Lumber and Brick		10,903		12,000
Carriages, Agricultural Implements, &c		586		10,000
Tobacco		915		2,000
Shipping		210,000		128,000
Sundry		1,587		6,500
		$1,478,645		$3,000,000

Owing to the manner in which the Customs returns, as published, are made up, no aid whatever can be had from them in ascertaining either the actual exports or imports of the Island; consequently it not only renders the accurate construction of such a statement as the preceding, a matter of considerable labour, but does a serious injustice to the trade of the province.

MANUFACTURES.

The manufactures of Prince Edward Island are limited but have rapidly developed of late. They consist of butter, cheese, starch and soap factories, tanneries, grist, saw and woollen mills, factories for canning and preserving meat and fish, carriage factories, &c. By the census of 1881 the figures of Island industries were as follow:—

Capital invested	$2,000,000
Number of hands employed	5,767
Yearly wages, over	$800,000
Value of products	$3,500,000

In 1882 two cheese factories were put into operation, and one creamery, for the manufacture of butter and cheese. The production of that year was about 2,000 boxes of cheese, valued at $12,000, or £2,400 stg. Now the number of

cheese factories has increased to four, and the owners expect to place in the market about 5,000 boxes. The quality is pronounced excellent, and it meets with a ready sale in the adjoining Provinces, as well as entirely taking the place of the imported article at home. The value of this year's operations is estimated at $28,000, or £5,600 stg. This year the number of starch factories has increased to ten, with a total capacity of 2,500 tons; the output averages about 1,500 tons, the quantity being affected by the price and supply of potatoes, and the demand for the product. This would be worth about $90,000 or £18,000 sterling.

In addition to the above, there are three large machine shops, with accompanying foundries, a smaller for repairing guns, sewing machines, &c., and for electroplating; several furniture and tobacco factories, two high class cloth factories of considerable capacity, a boot and shoe factory, steam biscuit factory, three large woodworking factories, and numerous other minor industries, all in full employment, while a "roller process" flour mill with a capacity of 80 barrels per day is in course of completion.

EDUCATION.

The administration of the educational interests of the Province is vested in a Board of Education, a Chief Superintendent and Inspectors. Each District has a local Board of Trustees, elected annually by the ratepayers. By the report of the Superintendent for 1886, it appears that there were then 437 public schools comprising 509 departments, 498 of which were in full operation. These are divided into three classes, Primary, Advanced, Graded, and High Schools. The salaries of the teachers are paid from the Provincial Treasury, but may be supplemented by local assessment, in which case the Treasury pays a further equal amount. The Government subsidy varies, according to grade, from $180 to $450 for male teachers, and from $130 to $380 for female teachers. The amount paid for Education, by the Government alone, for the year 1886, was $111,992.21, over £23,000 sterling, or about 44·8 per cent. of the average revenue, while the supplements &c. paid locally amounted to $36,786,75.

A special report of the Chief Superintendent states the following:—

"Up to 1852, the Schools of this Province were mainly supported by voluntary subscriptions, and such local efforts as could be secured by mutual co-operation. In 1852, the Free Education Act was passed, under which the salaries of Teachers were paid almost entirely from the Provincial Treasury. The stimulus thus given to education resulted in the establishment of the Provincial Normal School in 1856, and of the Prince of Wales' College in 1860. From 1860 until 1877, very little was effected in the way of legislation for the improvement of the schools, although the administration was very effective during that period. In 1877 the Public Schools' Act was passed, which provided for the establishment of a Department of Education, and introduced into our Public School system many of the most approved principles and most modern methods of other countries. In 1879 the College and Normal School were amalgamated, and ladies were admitted for the first time into the former institution. Many improvements in the administration of the educational affairs of the Island, for the advancement and encouragement of the teachers, and for the grading of the different schools, have been introduced since 1879, and are now beginning to be in effective operation.

The effects of the different changes and legislative enactments will best be represented by giving the statistics for each decade since 1841:—

	Schools.	Pupils.	Population of Province.
1841.....	121	4,356	47,034
1851.....	135	5,366	66,457

1852 Free Education Act passed.
1856 Normal School established.
1860 Prince of Wales' College opened.

	Schools.	Pupils.	Population of Province.
1861.....	302	12,102	81,000
1871.....	381	15,795	94,021

1877 Public Schools' Act passed.
1879 College opened to ladies.
1879 College and Normal School, amalgamated.

	Schools.	Pupils.	Population of Province.
1881.....	486	21,601	108,981

It will be observed from the statistics here given, that during the period previous to the introduction of the Free Education Act not more than one in twelve of the population attended school. From the period between the passing of the Free Education Act, 1852, and the enactment of Public School Laws of 1877, the attendance was one in 6 of the population. Under the Public Schools' Act of 1877 and its amendments, the attendance was one in five."

In the above statement the departments are counted as separate schools.

The Prince of Wales' College, which includes the Normal School is situated in Charlottetown, and its staff consists of a Principal and 3 Professors. Attached to it as an adjunct to the Normal Department is the Model School with two Teachers.

In addition to these public sources of Education, there are in connection with the Roman Catholic Church, Saint Dunstan's College in the vicinity of Charlottetown, two Convent schools within the city, and several others located in various parts of the Island. In all these, both boarders and day scholars are received.

St. Peter's school in connection with the English church of that name, also gives means of tuition to children whose parents are willing to pay for the same.

CHARLOTTETOWN.

Charlottetown, the seat of Government, is pleasantly situated upon a point of ground, at the confluence of the York, Elliott and Hillsborough rivers. It contains about 13,000 inhabitants, and is well laid out with wide streets, which intersect at right angles. Its affairs are managed by a corporation, consisting of a Mayor and ten Councillors. The harbour is large, deep and well sheltered, and is said by Admiral Bayfield (a standard authority) to be, in every respect, one of the finest harbours in the world. It is the principal port of shipment, and has a very thriving trade.

Many improvements have been made in the city in recent years; originally built of wood, it has suffered, like all such, from numerous fires, some of considerable extent. As a result of these, most of the business premises destroyed have been rebuilt in brick, and in a style of architecture that would be creditable in more pretentious places.

The city has hitherto depended on limited sources within its own borders for its water supply, but water works are in immediate contemplation and the recent discovery, by boring, of a copious supply of excellent quality, within three miles, gives encouragement to their construction during the ensuing year.

Handsome private residences have been and are being erected in various locations in and about the city, some few of brick but the great majority of wood. A large hotel has recently been completed in addition to those already in existence.

There are two hospitals, the Charlottetown hospital, in charge of the Sisters of Charity, and the Prince Edward Island hospital, managed by a general board of directors.

The shops in the city are generally handsome and commodious, and ample, well assorted stocks will be found in nearly all of them, and owing to small taxation and low rates, prices are generally very reasonable.

Gas is supplied by a company where required, but the streets and many of the principal stores are lighted by electricity.

The Merchants Bank of Prince Edward Island has its office on Water street, and agencies of the Merchants Bank of Halifax and Bank of Nova Scotia have been for some time in operation.



A branch of the Young Men's Christian Association has existed here for the last thirty years. It has a well supplied reading room.

Several temperance associations are represented both in the city and over the Island. The Benevolent Irish society, the Caledonian Club, Foresters, Masons, Oddfellows, Society of St. Vincent de Paul and other less formal charitable associations are doing a good work each in its own sphere, several having branches or separate similar organizations in other parts of the country.

There is a small theatre owned by the Benevolent Irish Society, where performances are given occasionally by travelling companies, in summer and fall, and by the Dramatic Club of the Society in the winter.

Concerts, vocal and instrumental, either by one or other, or a combination of two or more of the Amateur Musical Clubs and Choirs, or by good professionals (combining the pleasure of a summer trip with enough work to pay expenses), Bazaars, Public Teas, Church and other Socials, Lectures, &c., &c., meet a wide range of tastes in the way of social and literary amusements.

Queen's Square, the large public square surrounding the Dominion and Provincial buildings, has, within the last few years, been laid out with hard, smooth paths and well trimmed grassy lawns, planted with trees, and embellished with numerous beds of flowers and foliage plants, which, during the season, show a marvellous luxuriance of growth.

There is also a Public Park, containing about forty-six acres, to the west of the city which, besides a number of drives giving varied views of the city and harbour, furnishes the Military Parade Ground, Football Grounds, an excellent Cricket Field, several Lawn Tennis Courts, good picnic places among the trees, and, for winter amusement, a lofty Toboggan Slide, arranged to connect with the harbour ice when formed.

Though the winter may seem pretty long, yet the much larger proportion of bright, sunny weather which distinguishes it from the same season in Britain, gives a greater zest to outdoor exercises, and to the various amusements popular on this side the Atlantic. Besides the tobogganning previously referred to, Skating and Curling, either in the rinks, or on the ponds, or harbour ice, Snow-shoe tramps, Sleigh-driving, and the exciting, swift, Ice-boat sailing, all help to enliven matters considerably, and, residents and visitors who enter heartily into the social life of the city, with its private and semi-private parties and entertainments, find the time anything but gloomy.

SUMMERSIDE.

The County Town of Prince County is situate upon Bedeque Bay forty miles west of Charlottetown. It is a town of about 3000 inhabitants, and used to do a large amount of shipbuilding, but from various well known causes, this is almost a thing of the past. It has a fine harbour, and, through the spring, summer and fall, has daily communication with Point du Chene and Shediac, in New Brunswick, and thence by rail with all the rest of the Continent, besides weekly visits of steamers to and from the Upper Provinces, &c.

A large export and import trade is done here, as well as an extensive wholesale and retail distributing traffic through the county, it being, also, the principal oyster mart of the Island.

The educational opportunities are very good both in the public schools and by private tuition.

A branch of the Young Men's Christian Association has recently been formed here.

The shops are numerous and well stocked.

The Bank of Nova Scotia, and Merchants Bank of Halifax have branches in the town, and there is also the Summerside Bank which has been in existence for upwards of twenty years.

ALBERTON.

Alberton, to the westward of the Island, is distant forty miles from Summerside, and is situate upon Cascumpec Bay, which is largely frequented by fishing



vessels that come in to transship their fish and secure supplies, and occasionally for shelter. For this latter purpose it is the only harbour available on a long stretch of coast, and efforts are being made to deepen the channel over the bar to adapt it for larger vessels which improvement its trade deserves and requires.

The village is dry, airy and healthy, and is frequented by quite a number of summer visitors.

GEORGETOWN.

Georgetown, the chief town of King's County, 30 miles east of Charlettown, is situated on a long promontory formed at the confluence of the Cardigan and Brudenell rivers. It has a magnificent harbor which remains open far into the winter, and is one of the ports of call for the winter steamer. It has a good trade and the beauty of its harbour and situation, its boating and bathing facilities, and many other advantages, must bring it into prominent notice as a very desirable location for either permanent or summer residence.

SOURIS.

Souris, the eastern terminus of the railway, 60 miles east of Charlettown, is the outlet for the exports of a large portion of Kings County. It also possesses a fine harbour, which has, of late, been considerably improved, and the volume of shipping trade is large and increasing. It is beautifully situated and is also an inviting summer resort.

Other villages there are, such as Kensington, Montague, Saint Peter's, Cardigan, Crapaud, Tignish, Mount Stewart, Hunter River, Breadalbane, &c., all of them having the advantage of good harbours or railway stations.

PRINCE EDWARD ISLAND AS A FAMILY SUMMER RESIDENCE, AND ITS ATTRACTIONS TO TOURISTS.

These remarks upon Prince Edward Island would be incomplete, did we neglect to speak of the many attractions which it presents as a watering place. In order to avoid the appearance, of undue laudation, which often renders local descriptions repulsive, liberty has been taken with some observations by a writer who does not allow his pen to indulge in such extravagance. Its summer climate is delightful, free alike from chilling fogs and excessive heat. The landscape is sufficiently undulating to relieve it from the monotony of the prairies, while the bays and winding estuaries to be seen on every hand, with their silvery waters and varied banks, together with the dark and bright green foliage of the evergreen and deciduous trees, and the rich verdure of the meadows, make up a scenery which, if not grand, is at least beautiful and quietly picturesque. Surrounded by the the Gulf of St. Lawrence, whose waters are almost as saline as those of the ocean itself, it enjoys all the ozone and coolness of the sea breeze, and the advantages that can only be derived from sea bathing. These, with the opportunities for healthful exercise or quiet rest, and the facilities for innocent mirth, removed from the immoral tendencies and other evils of large and expensive establishments, render it a most desirable retreat. Hotel accommodation has improved vastly of late, and visitors find no difficulty in securing summer quarters, (either in them, or, in some of the numerous comfortable farm houses in which preparations are made for their reception,) at very moderate rates. Sportsmen have ample opportunity for indulging their passion; the rivers teem with trout, while very many enjoy going out in the bays with the boats mackerel fishing. Game there is also in abundance, such as wild geese, brant, duck, partridge, plover, wood cock, snipe, hares, &c.

To families and others of comparatively limited means, the Island offers a haven of rest from many troubles, as, owing to moderate house rents, ranging in Charlottetown from $80 to $150 or £16 to £30 sterling, the low cost of provisions, fuel, &c., and the moderate style of living which obtains here, an amount of comfort, enjoyment, and freedom from petty cares, can be gained from an income of, say, £250 to £300 sterling a year, impossible in Britain. Of course a

larger income would justify keeping horses, carriages, &c., though many residents, by careful management, enjoy that luxury on no more than the above stated amounts.

A fair idea of the retail market prices of a number of articles of ordinary consumption and use will be gained from the following list:—

Articles.	Dollars.	Sterling.
Beef, small ..... per lb.	5 cts. to 12 cts.	2½d. to 6d.
" quarter ..... "	4 " 9 "	2d. to 4½d.
Mutton ..... "	5 " 9 "	2½d. to 4½.
Lamb ..... "	5 " 8 "	2½d. to 4d.
Pork, small ..... "	10 " 12 "	5d. to 6d.
" carcase ..... "	6 " 8 "	3d. to 4d.
Turkeys, each	$0.75 to $1.25	3s. 1d. to 5s· 2d.
Geese, "	40 cts. to 60 cts.	1s. 8d. to 2s. 6d.
Ducks, "	30 " 40 "	1s. 3d. to 1s. 8d.
Fowls, "	20 " 25 "	10d. to 1s.
Chickens, per pair	30 " 50 "	1s. 3d. to 2s. 1d.
Butter, fresh ..... per lb.	18 " 25 "	9d. to 1s.
" salt ..... "	16 " 25 "	8d· to 1s.
Eggs, per dozen	10 " 25 "	5d. to 1s.
Flour (Island) ..... per 100 lbs.	$2.50 to $3.00	10s. to 12s. 6d.
" Imported ..... per brl. of 196 lbs.	$5.00 to $6.00	£1 to £1 4s. 2d.
Wheaten bread ..... per. lb.	.....3 cts.	.....1½d.
Oatmeal ..... per 100 lbs.	$2.25 to $2.50	9s. 2d. to 10s. 2d.
Hay ..... per 100 lbs.	40 cts. to 60 cts.	1s. 8d. to 2s. 6d.
Tea ..... per lb.	25 " 40 "	1s. to 1s. 8d.
Coffee ..... "	35 " 50 "	1s. 6d. to 2s. 1d.
Sugar ..... "	6 " 8 "	3d. to 4d.
" (white refined) ..... "	8 " 10 "	4d. to 5d.
Molasses ..... per gall.	40 " 50 "	1s. 8d. to 2s. 1d.
Rice ..... per lb.	..... 4 "	.....2d.
Pearl barley ..... "	..... 4 "	.....2d.
Tobacco ..... "	32 cts. upwards	1s. 4d. upwards.
Vinegar (pure) ..... per gall.	..... 50 cts.	.....2s· 1d.
Coal, ... per ton of 2,000 lbs.	$2.60 to $3·80	10s. 10d. to 15s 10d.
Grey Cottons ..... per yard.	3 cts. to 10 cts.	1½d to 5d.
White " ..... "	4 cts. to 28 cts.	2d. to 1s. 2d.
Tweed, (Scotch) ..... "	$1.00 to $3.00	4s. 2d. to 12s. 6d.
" (Canadian) ..... "	40 cts. to $1.50	1s. 8d. to 6s. 3d.
Horses	$60. to $250.	£12.10s. to £52.10s.
Cows	$20. to $50.	£4. to £10.
Sheep	$3,25.	.....13s. 6d.

Being of such limited area, and its inhabitants so much devoted to domestic pursuits, it is not surprising that but little is known abroad, and in Britain in particular, regarding Prince Edward Island. However its fame, at least on this side the Atlantic, is increasing, and, now, instead of being characterised, as it was in the latter part of last century, by a very prejudiced English writer, who had never seen it, as a "rascally heap of sand, rock and swamp, occupied only as a military station, and producing nothing but potatoes," the Island has been aptly termed and is admitted to be "The Garden of British North America."



SECTION V.

PROVINCE of QUEBEC.



PARLIAMENT BUILDINGS, QUEBEC.



OF THE

PROVINCE OF QUEBEC

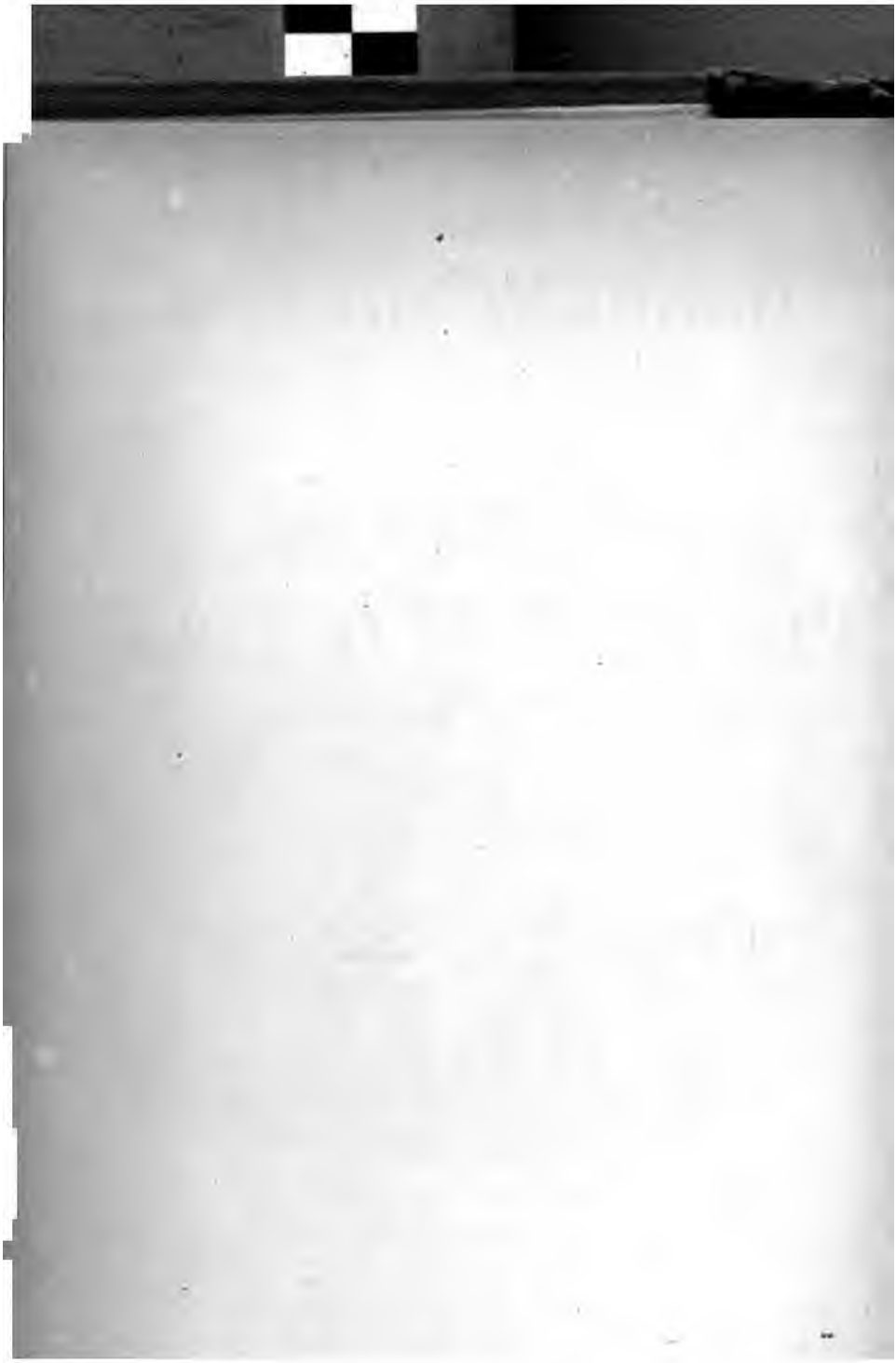
BY

HON. HONORE MERCIER

PREMIER OF THE PROVINCE

QUEBEC :

1889





THE PROVINCE OF QUEBEC.

I

HISTORICAL SKETCH.

The Province of Quebec was the cradle of French colonization in America. After the discovery of Canada by Jacques-Cartier in 1534 and the unsuccessful attempts of Roberval and the Marquis de la Roche to effect settlements in America, the French founded the colony of Port-Royal, which, for various reasons, developed but slightly. Champlain, who was at first employed by de Monts at Port-Royal, abandoned that enterprise to devote his energies to the establishment of Quebec, the centre of the great colonizing movement out of which sprang New France. At the close of the XVIIth century, the French possessions in America extended to the Gulf of Mexico and embraced the finest and richest portion of the new continent, that is to say, the whole of Canada and more than two-thirds of the present territory of the United States

The colony founded by Champlain in 1608 has passed through many vicissitudes. Exploited by monopolists and decimated by almost continual wars with the Indians or the New England colonies, its population were called upon to display unusual energy and valor to maintain down to 1759 the honor of the French flag in America.

Administrative System.

Down to 1663, New France was under the almost exclusive control of the trading companies, to whom it was handed over by the king. The Governor devoted himself especially to military matters, so that the internal administration was carried on chiefly by the officers named by the companies, and, from 1647, by a council in which the inhabitants of the country had a certain number of representatives. In 1663, Louis XIV resumed the control of affairs and of the government of the colony, to which he granted a constitution. The Sovereign Council was charged with the administration of justice and constituted, a court of last resort, and shortly afterwards the *prevôté* of Quebec and the royal jurisdictions of Three Rivers and Montreal, in addition to the seigniorial courts

completed the judicial organization. The Governor represented the royal authority and devoted his attention especially to the defence of the country, while the management of the financial affairs devolved upon the Intendant, who was also invested with somewhat extensive judicial powers.

Feudalism and Colonization.

The feudal system, introduced into the colony almost at its birth, was one of the most efficacious means employed for the settlement of New France. To encourage the settlers or the military officers who distinguished themselves by their devotion to the advancement of the country and the service of the king, tracts of arable lands were granted to them in fiefs and seigniories, on the condition of establishing thereon a certain number of settlers, failing which the grants lapsed. This restriction contributed powerfully to the advancement of colonization. To retain their grants, the seigniors became colonization agents, brought settlers out from France when they could not procure them in the country, and, in fine, took every possible means to keep up the settlements formed on their lands.

The Clergy and Education.

The glorious part played by the clergy in the establishment of New-France is well known. While our missionaries civilized the aborigines, converted them into friends and allies of the French, and discovered a large portion of the territories, which they thus brought under the domination of the king, the secular clergy ministered to the colonists and created the parochial organization, which has been our bulwark and our great source of strength under British rule. To the clergy, we also owe the institutions of classical and elementary education which we possessed at the time of the cession of the country to England; and it was in these institutions, maintained by the clergy, that were formed the great patriots who defended us in the dark days of our history, and who finally won for us the responsible government which we have now enjoyed for half a century.

In spite of the almost continual struggles which it had to maintain against the New England colonies, the Indians, and the monopolists, during the first period of its history, New France had succeeded in becoming a regularly constituted country from the religious and civil point of view, when the war broke out which culminated in the defeat of the Plains of Abraham, in 1759, and which, subsequently, by the treaty of 1763, assured to England the possession of all the French territories in America. The French population then numbered about 70,000 souls, but they were deserted by most of the nobles and the seigniors, who returned to France rather than submit to the English yoke, so that there remained with that population only the clergy to guide and defend them.

English Rule.

Notwithstanding the treaties, which guaranteed to the French Canadians the maintenance of their religion and their civil laws, the conduct



of the authorities, in the early days of English rule, created much uneasiness in consequence of the efforts of certain fanatics to crush everything French and Catholic. The military regime was continued down to 1774; but, at that date, the Canadians were reassured by the concession of a more equitable form of government to divert them from sympathy with the revolt in the New England colonies. This measure had the desired effect; in 1775, the French Canadians took up arms to repel the American invasion and defend the English flag against the attacks of English colonists.

Political Struggles.

The act of 1774 was followed by the constitution of 1791, which divided Canada into two provinces and granted to each a legislative assembly composed of representatives elected by the people. Unfortunately, this governmental system did not carry with it ministerial responsibility and the confidence which it at first inspired soon changed to discontent and distrust provoked by the arbitrary conduct of some of the governors of the colony. After giving a new proof of their loyalty by the part they took in the war of 1812, during which de Salaberry shed lustre on our race at the famous battle of Chateauguay, the French Canadians protested against the wrong-doing of the administration and, as a check upon the fatal influence of the bureaucrats, demanded the control of the public funds, which had been mismanaged or plundered by the favorites of England. This, in other words, was asking for ministerial responsibility as it then and has ever since existed in England. The Canadians were led in this struggle by Bedard, Blanchet, Parent, Papineau, Morin, Duvernay and all that galaxy of illustrious patriots, who may have committed certain mistakes and fallen into certain excesses, but who are none the less entitled to the honor of having introduced into America, in all its fullness, the system of responsible government.

After the melancholy events of 1837 and 1838, during which the patriots shed their blood for the conquest of the liberties which they claimed, the constitution of 1791 was temporarily superseded by martial law—which constitutes one of the darkest periods of our history—and finally by the constitution of 1841 granting to Canada the responsible government so long demanded. To neutralize the influence of the French Canadians, however, the constitution of 1841 united the two provinces under one government. This union provoked well grounded apprehensions, which were aggravated by the efforts of the bureaucrats, seconded unfortunately by Lord Metcalfe, to attenuate the privileges guaranteed them by the new constitution; but Lafontaine, the leader of the French Canadians, succeeded in triumphing over these obstacles, in opposing a victorious resistance to the intrigues of the "Family Compact" and in extracting from the constitution not only all the advantages possible, but even others which its authors had not foreseen.

Encouraged by these successes, some of our representatives overstepped the bounds of prudence, and to better assure the influence of Lower Canada—now the province of Quebec—in the administration of the country, they demanded that the representation of the people in the Legislative Assem-



should be based on the number of the population. A motion in this sense was made in the Legislative Assembly by Mr P. J. O. Chauveau, member for the county of Quebec, but opposed by Lafontaine, who, foreseeing that the population of Upper Canada—now Ontario—would increase more rapidly than that of our province, objected to this mode of representation, which in the long run could only result to our detriment.

The system of responsible government was finally and fully established by the wise policy of Lord Elgin, the most illustrious of our English governors before Confederation. This governor allowed himself to be exclusively guided by the advice of his ministers and never swerved from this rule, even when the Tories revolted in 1849, made an attempt on his life and burnt the Parliament House, because he had given his sanction to the bill granting an indemnity to the victims of the insurrection of 1837, in Lower Canada.

Annexation Movement.

This was the expiring effort of the Family Compact to annihilate the influence of the French Canadians. Seeing that they had failed in their insurrection and that their conduct had been condemned by the Imperial authorities, they organized the annexation movement of 1849, to which the commercial crisis through which the country was passing at the time, in consequence of the establishment of Free Trade in England, lent a certain opportuneness, and then battle-weary ended by forming an alliance in 1854 with some of the Liberal leaders who had succeeded Lafontaine.

Era of Progress.

To counteract the consequences of the change made by England in her fiscal policy and to arrest the crisis which this change had brought about in Canada, the Coalition ministries, which succeeded that of Lafontaine, inaugulated an era of public improvements, which introduced a large amount of capital into the country and imparted great activity to trade. This activity was also greatly enhanced by the reciprocity treaty, which threw open to our natural products the profitable market of the United States. Lastly, came the abolition of the seigniorial tenure to crown the economic reforms, which had given such an extraordinary impulse to the material progress of the country.

To the Liberal and Coalition governments, which succeeded each othe from 1841 to 1867, we are also indebted for the municipal and school organizations actually in vogue in our province, for our civil code and code of civil procedure, for our system of judicial decentralization, and for the first serious measures adopted to stimulate colonization.

On the occasion of the coalition of 1854, a fraction of the Reform party of Upper Canada separated from Mr Hincks and adopted as their programme the assertion of the rights of the upper province against the pretended encroachments of Lower Canada. Placed on such burning ground, politics took an exciting turn and divided the two parties about equally. Warmly taking up Mr



Chauveau's proposal in favor of representation by population, the Grits succeeded in rallying the majority of Upper Canada to their side and ended by securing its triumph, through an alliance with the Conservatives to carry the Confederation Act which recognized that principle.

Confederation.

The constitution of 1867 gives to the province of Quebec an autonomous government as regards all its own particular interests. Interpreted in accordance with the sense and spirit of the Federal pact of 1864 and 1865, this constitution assures the perfect autonomy of the province and the maintenance intact of its laws and institutions, and would enable it to energetically and efficaciously develop our immense material resources. It is at this that the whole policy of our province should aim, a policy based on the most inviolable respect for all the interests of the different races and religious beliefs with whose defence and safeguard we are specially entrusted. From the moment these interests no longer find in the provincial administration all the protection to which they are entitled, the Local Legislature becomes so much useless machinery and legislative union, *ipso facto*, a live issue.

II

GEOGRAPHICAL POSITION.

The province of Quebec occupies the centre of the Confederation (Dominion of Canada). With its eastern shores washed by the waves of the Atlantic and traversed throughout its entire length by the river St. Lawrence, it unites all the advantages both of a maritime and a continental country. Situated in the temperate zone, its climate is among the most favorable to the activity, energy and industry of the vigorous peoples who inhabit it.

The province extends from east to west between 57° 50' and 80° 6' west longitude from the meridian of Greenwich, and from south to north between 52° and 45° north latitude.

Its configuration takes the irregular form of a triangle, with its base to the south-west and its apex at l'Anse au Sablon immediately inside the straits of Belle-Isle. Its greatest length, represented by a line drawn from White River at the north western extremity of Lake Temiscamingue to the intersection of the shore line of the Gulf of St. Lawrence by the eastern boundary at l'Anse au Sablon, is about 1350 miles or 2573 kilometres. Its greatest width, measured from north to south along a line drawn between the seventy-first and seventy second degrees of longitude, is almost 500 miles or more than 800 kilometres.

According to the conclusions of the report of the special committee of the Legislative Assembly on the subject of its northern and north-western boundaries, the province of Quebec is bounded as follows:

"To the east, south-east and south by the Gulf of St. Lawrence, the Bay des Chaleurs, the river Ristigouche and the interprovincial line which divides it from New Brunswick, to the river St Francis; thence by the international line dividing *Canada from the* United States, to the Hall river; thence by the 45th

degree of north latitude to its intersection with the middle of the river St. Lawrence at Point Saint-Regis ; to the south-west, west and north-west by the middle of the river St.Lawrence from Point Saint-Regis to Point à Beaudet; thence by the interprovincial line, which separates it from the province of Ontario, to Point Fortune on the Ottawa ; thence along the middle of the Ottawa river and lake Temiscamingue to the northern extremity of that lake ; thence by a meridian line to James Bay; to the north-west,north and north,by James Bay as far as the mouth of the East-Main river, by the right shore of the said river from its mouth to its source ; thence, going north by a line striking the most northern waters of the great river Esquimaux ; thence by the left bank of the same river, the north shore of the Bay du Rigolet (Hamilton's Inlet), by the meridian of the most eastern point of the sources of the river St. Paul or Petit Esquimaux ; by the left bank of this river to the 52nd degree of north latitude, and following this parallel until it strikes the meridian of l'Anse au Blanc Sablon; and thence by this meridian of the 52nd degree of latitude to the Gulf of St. Lawrence."

The islands of Anticosti and Brion, the Bird Rocks, the Magdalen Islands and all the islands situated near Gaspé and along the northern coast of the Gulf of St. Lawrence to l'Anse au Blanc Sablon also belong to the province of Quebec.

These limits embrace the actual territory of the province and that claimed by it, according to the conclusions of the report of the special committee of 1886. The superficies is 116,531 square miles or 74,579,840 acres.

Taking into account the sinuosities of its outlines, the perimeter of the province of Quebec, within its actual limits, is about 3000 miles or 4,828 kilometres, of which 740 miles or 1,190 kilometres are sea-coast, and 2,260 miles or 3638 kilometres are land-frontier.

The extent of sea-coast is much greater than these figures would seem to indicate. The shores of the Gulf and River St. Lawrence, from a line connecting Wolf Bay with Cape Rosier, as far as Quebec, may be included as coast, as along the whole of this distance oceanic navigation is carried on as in the open sea. Therefore, 750 miles or 1206 kilometres may be added for the distance between Wolf Bay and Quebec along the north shore, and 400 miles or 644 kilometres for the distance between Cape Rosier and Quebec along the south shore, which gives an interior development of coast to the extent of 1,150 miles or 1,850 kilometres. Add this to the extent of the maritime frontier proper and we get a total of 2590 miles or 3,040 kilometres.

III

SUPERFICIES.

The area embraced within the boundaries of the province of Quebec forms a superficies of about 165,525,990 acres, equal to 258,634 square miles, or nearly 669,896 square kilometres. Deducting the surface of the inland waters and those of the River and Gulf of St. Lawrence, the land surface amounts to 120,764,651 acres, equal to 188,688 square miles or 488,676 square kilometres. Compared with the area of their territories, our province exceeds all the countries of Europe, except Russia, as indicated by the following table :



Countries.	*Square miles.*	*Square kil.*
Province of Quebec	258,634	669,846
Austria-Hungary	240,942	624,024
France	204,177	528,805
Spain	197,667	511,944
Sweden	170,979	444,824
Turkey in Europe	125,289	324,480
Prussia	137,066	354,992
Norway	123 205	319,093
Great Britain and Ireland	120,832	312,947

As regards the European countries, the figures in the column of miles are taken from Martin's *Statesman's Year Book* for 1888. This table shows that the superficies of the province of Quebec exceeds by 141,041 kilometres that of France, by 356,899 kilometres that of the United Kingdom of Great Britain and Ireland, and by 314,584 kilometres that of Prussia, that is to say, that the territorial extent of our province exceeds by more than a third that of the three European countries which take the foremost rank among the important nations of Europe.

IV

TERRITORIAL DIVISION.

For administrative purposes, the province of Quebec is divided into twenty judicial districts, comprising sixty-five counties or electoral colleges, which are subdivided into cities, towns, villages, townships and parishes. In addition to these subdivisions, certain counties, especially in the western section of the province, include immense tracts of the State domain, partially surveyed and under lease to private persons or to companies, who work the timber and the mines contained in the same. The portions of the public domain thus conceded by the State are designated under the names of "timber limits" and "mining locations."

The extent of territory surveyed and divided into farm lots, actually available, is 7,324,530 acres, and the grants and sales made to the present date form an area of 21,660,449 acres :

Lands conceded in fiefs and seigniories	10,678,931
" " in free and common soccage	10,981,518
	21,660,449

It has been hereinbefore stated that the extent of land comprised within the limits of the Province of Quebec amounts to 120,018,964 acres. By striking off from this figure the extent conceded in seigniories and in free and common soccage, there will remain 98,358,515 acres, which represent the extent still available of the lands comprised in the State domain. Of this available quantity, 7,324,530 acres are surveyed, divided into farm lots and open to settlement.

Among the electoral colleges, there are some exceedingly extensive. Thus, for example, the county of Chicoutimi and Saguenay alone embraces a territory

exceeding by 2576 square miles the collective areas of Holland, Belgium, Portugal and Scotland, which together form an area of 90,776 square miles : Again, the territory included within the county of Pontiac almost equals the superficies of Belgium and Holland together.

V

DISTRIBUTION OF LANDED PROPERTY.

According to the data supplied by the census of 1881, of the 120,018,964 acres of land contained in the province of Quebec, 12,625,877 acres were at that time occupied by 123,932 proprietors, 12,344 tenant farmers, and 1,587 employees, and of the 12,625,877 thus occupied, 6,410,264 had been improved, — which probably means cleared — 4,147,984 acres were under crops, 2,207,422 acres in pasture, and 856 acres in gardens and orchards.

A comparison of these figures with those of the census of 1871 shows the following differences :

		1881	1871	*Difference.*
Number of acres	occupied.....	12,625,877	11,025,786	1,600,091
" "	improved.....	6,410,264	5,703,944	706,320
" "	under crops.....	4,147,984	3,714,304	433,680
" "	in pasture.....	2,207,422	1,943,182	264,240
" "	in gardens and orchards....	856	46,458	45,602
" "	proprietors.....	123,932	109,052	24,873
" "	tenant farmers.....	12,344	7,895	4,449
" "	employees.....	1,587	1,132	455

The average, per head, of the extent of land owned is 88·8 and that of the lands unoccupied 79·5 acres. The number of persons per square mile of territory is 7·2.

VI

SUPERFICIAL CONFIGURATION.

The province of Quebec is, so to say, enclosed between two mountain chains : the Laurentides to the north and Alleghanies to the south. These chains increase their distance from each other as they proceed from east to west. By their position, as well as by their geological formation, they constitute two distinct systems, although both are composed of sedimentary deposits in the metamorphic state. The mountains of the north eastern chain are of a more crystalline nature and more ancient formation than those of the southern chain, as they belong to the azoic age, while those to the south belong to the paleozoic period. Between these two chains, there are in the valleys of the St. Lawrence and some of its tributaries the mountains known as Mounts Rouge, mont, Belœil, St Therese and Mount Royal.

Laurentian System.—The general trend of the Laurentides is from north-east to south-west. From the eastern frontier of the province, that is to say, from Labrador, to the neighborhood of the Saguenay, the Laurentides form a *sort of compact* mass or barrier only broken through by the courses of the



arge rivers which cut it transversely, and stretch in width from the coast to the " height of lands." In approaching the région of the Saguenay, the chain separates into two distinct ranges: 1o, that of the " height of lands ", which describes a great curve towards the north to turn the great valley of Lake St. John and then continues almost in a straight line to form the northern watershed of the Ottawa basin ; 2o, that of the Laurentides properly so called, which skirts the St. Lawrence to Cape Tourmente, and then begins gradually to run back from the river to a distance of thirty miles or forty-eight kilometres in rear of Montreal, thus forming the southern watershed of the basin of Lake St. John and the Ottawa river.

Along this whole distance, the average height of the Laurentides is about 1,600 feet or 493 metres. But this height is not uniform. Between Lake St. John and Murray Bay, the principal crest of the chain attains an altitude of 4,000 feet, 1,220 metres, over the sea level, while the summits of the mountains nearest to the St. Lawrence are little more than half as high. Bayfield has estimated at 2,547 feet, or 776 metres, the height of the Eboulements mountain between Murray Bay and Bay St. Paul. He sets down at to 1,919 feet, 585 metres, the height of Cape Tourmente, and to 2,687 feet, 819 metres, that of the St. Anne mountain, twenty miles below Quebec. It is these mountains which impart to the surroundings of our ancient capital that grand and picturesque aspect which is so much admired by all travellers.

In the region to the north of the Ottawa river, the highest summit is that of the Trembling mountain, in the county of Argenteuil—its elevation being 2,060 feet or 628 metres, while that of the surrounding hills varies between 1,000 and 1,200 feet, 304 and 364 metres.

Between the Saguenay and the Ottawa, the principal ridge of the Laurentides is flanked on the north side by a multitude of foothills and precipitous spurs, cut by deep and narrow gorges ; with the exception of that of Lake St. John, the valleys are all small and the basins very numerous, but unimportant, the great basins of the Saguenay, St. Maurice and Ottawa, which are immense, always excepted. The summits of these mountains are generally rounded and form mamelons divided the one from the other by canons and breaches giving rise to valleys, plateaus, gorges and thousands of lakes, some of which are pretty extensive. Save a few bare peaks here and there, these summits are all clothed with forests of conifers and certain hard woods, while the valleys support a forest growth of deciduous trees and of pine, spruce, cedar and other woods, which supply the timber trade.

The average elevation of the great interior plateau, in which the basin of Lake St. John and the Upper Ottawa is situated, is about 600 feet above the sea level. Lake St. John, which occupies the eastern extremity of this great plateau, is only 293 feet, or 89 metres, over the sea, while Lake Keepawa, at its western extremity, is 760 feet or 224 metres above tide water, and the elevation of Grand Lake, about half-way between the two first, is only 700 feet or 212 metres. The length of this plateau is about 350 miles or 563 kilometres, and its average breadth exceeds 150 miles or 241 kilometres, which gives a

superficies of 52,500 square miles or 135,683 square kilometres. This plateau, which is composed in many places of a very fertile soil, is covered with rich forests, which furnish to the trade more than three-quarters of the immense quantities of timber annually exported from the province.

In the region of the Laurentides, there are thousands of lakes, several of which are very extensive, as the following table will indicate :

Lakes.	*Superficies.*	*Elevation.*
St. John,	360 miles or 92,240 hect.	293 ft. or 89 metres
Grand Lake	550 " 145,040 "	700 " 212 "
Keepawa	92 " 23,828 "	760 " 224 "
Temiscamingue	330 " 85,470 "	800 " 243 "

There are many other lakes, almost as large, and some even larger, but which have not yet been accurately scaled.

The Alleghany System. — This chain is only the prolongation of the Appalachians, of which the Alleghanies are an offshoot. Starting from the eastern extremity of the province, it skirts the southern shore of the St. Lawrence and only begins to trend away from it in the neighborhood of Kamouraska, about one hundred miles below Quebec. On leaving Gaspé, the principal axis bends towards the river and runs towards the north-west to the neighborhood of Ste Anne-des-Monts, then inclines towards the south-west to form the heights of the Shickshocks between the Cape Chat river and the river Matane; diverges from this point in the direction of the Chaudière river, beyond which the principal ridge runs towards the south-west for a short distance ; and then resumes a southerly course to leave the province and extend into Vermont under the name of the Green Mountains.

From Gaspé to Quebec, this mountain chain forms the watershed between the basin of the St. Lawrence to the north and the Bay des Chaleurs and Bay of Fundy to the south. The extremity of the Alleghany chain forms the great plateau of the Gaspé peninsula, which has an elevation of about 1,500 feet or 1456 metres above the surrounding sea level and is cut by deep gorges in which flow the rivers of that region.

The surface of this plateau is not materially varied except by the heights of the Shickshock mountains which have a development of about sixty-five miles in length by from two to six miles in width, and are distant from the St. Lawrence a dozen miles. These mountains rise into peaks and attain a height ranging between 3,000 and 4,000 feet, 912 to 1,216 metres. The loftiest peaks are those of mounts Bayfield, 3,973 feet or 1210 metres, Logan, 3,768 feet or 1,145 metres, Matouasi, 3,365 feet or 1,023 metres, and Bonhomme, 2,269 feet or 696 metres. The St. Anne, Cape Chat and Matane rivers have their sources back of these mountains, which they cut into deep gorges ; in their upper waters, the beds of these rivers are not more than 500 or 600 feet, 152 or 178 metres, over the St. Lawrence, into which they empty.

In rear of this principal axis and on a level with the upper courses of the rivers, there is a depression forming a great interior plateau, bounded to the south by the chain of heights which almost skirts the shores of the Bay des



Chaleurs and extends towards the south-west, following the direction of the frontier of the province. The highest peaks of this range of heights skirting the shore of the Bay des Chaleurs are the Conical mountain, with an altitude of 1,910 feet or 580 metres, at the foot of which the Grand Cascapedia river takes its rise, the three mountains situated at the head of the Bonaventure river, which are respectively 1,757, 1,394 and 1,324 feet high, and mount Tracadigèche, which rises to a height of over 1,800 feet above the bay of Carleton.

From Kamouraska, south-westwards, the hills gradually trend away from the river to a distance of 30 miles, or 48 kilometres to the south of Quebec, and of 50 miles or 80 kilometres to the south of Montreal. As the chain advances towards the south, its height gradually decreases and its northern slope forms an inclined plateau, whose general uniformity is only broken by numerous hills and a few mountains less elevated than those of Gaspé. The highest summits of this chain are in American territory, in the States of Maine, New Hampshire and Vermont; in the province of Quebec, it attains its greatest altitude, in mount St. Donat, in the county of Rimouski, the White mountain, in the township of Coleraine, mount St. Ronan, in the township of Buckland, the Ham mountain, mount Victoria or Orford, the Owl's Head near Lake Memphremagog, and the Sutton mountain. The height of these different mountains varies between 1,500 and 3,000 feet.

The upheavals of the slopes of this mountain chain, in the sense parallel to the general axis of the chain, form foothills of no great height, between which are valleys drained by the rivers which flow from the south into the St. Lawrence. Like those of the Shickshock mountain region, the Chaudière and St Francis rivers cut through the axis of the chain itself and have their headwaters in the valleys lying to the south of the chain and running parallel to it. In their upper course, the beds of the rivers which cross the chain or take there rise in it are from 500 to 900 feet, 152 to 276 metres, above the level of the St. Lawrence towards which they flow with an almost uniform fall and without any abrupt or remarkable descents.

Valley of the St. Lawrence.—This valley fills the space comprised between the two mountain chains above described. It has an area of 11,830 square miles or 20,637 square kilometres, of which 8,680 miles lie to the south and 3,150 miles to the north of the St. Lawrence. The southern part is about 280 miles or 450 kilometres long, with an average breadth of 31 miles or 50 kilometres, varying between a dozen miles at Kamouraska and about fifty to the south of Montreal, The northern part extends from Cape Tourmente to the western boundary of the province at the mouth of the river Beaudet, a distance of about 170 miles or 274 kilometres: its average breadth is about 15 miles, varying between none whatever at Cape Tourmente and about 30 miles in rear of Montreal.

At its western extremity this great valley forms an immense plain, circumscribed by the south shore of the St. Lawrence, the north bank of the Yamaska, and the western limit of the counties of Iberville, St. John's, and Laprairie. This plain occupies more than a third of the valley of the St. Lawrence, and, properly speaking, constitutes the valley of the Richelieu. Its shape is that of a triangle, with its head at the entrance of Lake St. Pete-

which is only an expansion of the St. Lawrence. The area of this triangle is 1400 square miles or 3626 square kilometres. Its surface is absolutely level all over or rather is only broken by the mountains of St. Thérèse, Rougemont and St. Hilaire, which are of small extent and are only isolated masses, rising abruptly from the plain like air bubbles upon the surface of water. Mount St. Hilaire, the largest of these intrusive masses, is about 1200 feet or 365 metres. From the Sugar Loaf, as the highest part of this mountain is called, all the surrounding valley can be taken in at a glance from east to west and the view is only bounded by the horizon as at sea. With the naked eye, the city of Montreal, the Victoria bridge, and even Lake Champlain, 50 miles or about 80 kilometres distant from St. Hilaire, can be discerned. The magnificent *coup d'œil*, the fairy-like panorama, which unrolls itself to the view from the summit of this mountain has won for it the name of Belœil under which it is officially designated.

The remainder of the St. Lawrence valley, that is to say, the strip bordering the plain just described, is more broken. The region comprised between the mouth of the Ottawa and Cape Tourmente, although generally level, sometimes rises by steep gradients forming terraces from 200 to 300 feet, 60 to 90 metres, above the level of the river, to which they run parallel. The rivers, which traverse this region, come from the mountains and form in their descent innumerable falls and rapids capable of furnishing almost unlimited motive power for industrial purposes. On reaching the lower plains, these streams have hollowed out for themselves deep beds, with steep sides, in the alluvial grounds.

VII

HYDROGRAPHY.

The province of Quebec has a shore line of 825 miles on the Atlantic. Along our coasts, this ocean takes different names : from l'Anse-au-Sablon to Point des-Monts on the north shore to l'Anse-au-Four and Cape Gaspé, on the south it is called the Gulf of St-Lawrence ; the indentation between Cape Gaspé and Point St. Peter is designated by the name of Gaspé Bay ; from Point St. Peter to Mackerel Point, it is again the Gulf of St. Lawrence, and, lastly, from Point St. Peter to the mouth of the river Ristigouche, it gets the name of the Bay des Chaleurs.

Properly speaking, the whole province, within its actual limits, is only a great basin, whose waters flow towards the St. Lawrence. Except the rivers of the southern slope of the plateau of Gaspé, which empty into the Bay des Chaleurs, and those of the narrow watershed contiguous to the frontier of New Brunswick and the State of Maine, which discharge into the same bay by the river Ristigouche, and into the Bay of Fundy by the river St. John, all the other rivers take their rise in the two mountain chains enclosing the province along its whole length and carry their waters into the St. Lawrence, which conveys them to the sea. The St. Lawrence is the principal artery of this immense



river system. In the province of Quebec, its total length, including the gulf, is 1,046 miles or 1,684 kilometres between the straits of Belle Isle and St Regis, or 605 miles. 974 kilometres, between St. Regis and Point-des-Monts, deducting the gulf. The water surface comprised between these two points forms an area of 5,054 square miles, or 1,298,954 hectares.

The influence of the tide is felt in the river as high up as Three Rivers, or to 900 miles, 1,449 kilometres, from the straits of Belle Isle. At Quebec it rises to 3.35 metres in the neap and 5.60 in the high tides of the equinox. The waters begin to become salty at St Thomas, about fifty-eight kilometres below Quebec, and at Kamouraska, sixty-four kilometres lower down than St Thomas, the water is sea-water in the full force of the term, to such a degree, in fact, that, under French rule, salt was there manufactured by evaporation from the water of the St Lawrence. McTaggart, an English engineer, has calculated that this great river pours annually into the ocean 16,678,883,260,000 litres of fresh water, which gives an average of 45,692,803,457 litres per day, 1,903,866,810 per hour and 63,462,227 per minute.

The principal rivers which empty into the St Lawrence, on the north side, are the :

	Length.			*Length.*	
Ottawa	615	miles	Outardes	234	miles
L'Assomption	70	"	Manicouagan	224	"
St. Maurice	280	"	Pentecost	75	"
Batiscan	93	"	Moisic	140	"
Jacques-Cartier	90	"	St. John	150	"
St. Anne	60	"	Natashquan	150	"
Montmorency	55	"	Mecatina	150	"
Murray	80	"	St. Paul or des Esquimaux	100	"
Saguenay	110	"			
Portneuf	80	"		2,948	"
Sault-au-Cochon	100	"			
Betsiamits	112	"			

The three largest of these rivers—the Ottawa, St. Maurice and Saguenay—also receive the waters of many large tributaries as follows :

Tributaries of the Ottawa.

River du Moine	80	miles.	River Petite Nation	50	miles
" Noire	115	"	" Rouge	120	"
" Coulonge	150	"	" du Nord	60	"
" Gatineau	250	"	"		
" Du Lievre	170	"	"	995	"

The portion of the basin of the Ottawa comprised within the province of Quebec has a superficies of about 40,130 miles, or 105,938 kilometres.

Tributaries of the St. Maurice.

Mekinac	30	miles	Shawinigan	35	miles
Bostonnais (Little)	37	"	Matawin	120	"
Bostonnais (Great)	90	"	Au Rat	25	"
Croche	65	"	Vermillion	100	"
Trenche	102	"	Flamand	25	"
Pierriche	22	"	Manouan	77	"
Pierriche (Great)	25	"	Au Ruban	30	"
Windigo	30	"			
				813	"

The basin drained by the St. Maurice and its tributaries has a surperficies of about 17,030 square miles, or 44,107 square kilometres, that is to say, that it exceeds by 14,752 kilometres the whole of Belgium, by 11,248 kilometres the whole of Holland, by 9,346 kilometres the whole of Wurtemberg and Baden together, and by 5,870 kilometres the whole of Denmark.

Tributaries of the Saguenay proper.

River	St. Marguerite	60 milles	River	Valin	100 miles
"	Shipshaw	110 "	"	Chicoutimi	55 "
					325

Tributaries of Lake St. John.

River	Chamouchouan	150 miles	River	Metabetchouan	90 miles
"	Mistassini	160 "			
"	Peribonka	140 "			
					540

On the south side, the principal affluents of the St. Lawrence are the following rivers :

River	Richelieu	72 miles	River	Ouelle	45 miles
"	Yamaska	87 "	"	du Loup	50 "
"	St. Francis	85 "	"	Trois-Pistoles	40 "
"	Nicolet	80 "	"	Rimouski	65 "
"	Bécancour	75 "	"	Madeleine	68 "
"	Chaudière	110 "			
"	Etchemin	55 "			882
"	du Sud	50 "			

The following rivers empty into the Bay des Chaleurs :

River	York	63 miles	River	Matapedia	60 miles
"	Bonaventure	75 "	"	Ristigouche	70 "
"	Cascapedia	65 "			
					333

Addition of all these data will show that the collective length of the principal rivers of the province amounts to 7,306 miles.

All these rivers constitute and furnish means of transportation which are of the greatest utility. Several of them are navigable for the greater part of their course, especially the Saguenay, Ottawa, St Maurice, Yamaska and St Francis : the others are used for driving timber and thus greatly facilitate the working of our immeuse forest domain : these rivers also supply manufacturing industry with almost unlimited water power, and thus permit the establishment in all parts of the province of factories of all kind, whose motive power costs almost nothing. These water powers offer above all special advantages for the making of wood pulp. Indeed, there is no country in the world, which can offer so many facilities to this industry, as the province of Quebec.

The length of the principal lakes is as follows :

	Length		*Length*
Lake Matapedia	12 miles	Lake Memphremagog	22 miles
" Témiscouata	26 "	Lake Nemicachingue	15 "
" St. Francis	15 "	" des Males	35 "



	Length.		*Length.*
Lake Temiscamingue.....	40 miles	" Edward.....	15 "
" Keepawa.....	25 "	" St. John	27 "
" des Quinze.....	25 "	" Kenogami.....	18 "
" Mijizowaga.....	15 "	" Pomoucachiou.....	35 "
" Antiquas (gr).....	25 "	" Pipmaugan	32 "
" Victoria(gr).....	20 "	" Pletipi.....	40 "
" Kakebonga (gr).....	20 "	" Mooshaulagan.....	25 "
" Papenegenegang.....	20 "	" Ishimanicouagan.....	30 "
" White Fish.....	15 "		
" Wabaskontyonk	20 "		

Lakes Mistassini and Abbitibbi are not included in this list, although they belong to the territory claimed by the province. These two lakes have the following dimensions :

	Length.	*Width.*
Mistassini.....	100 miles	12 miles
Abbitibbi	47 „	2 to 17 "

VIII

MINES AND MINERALS.

The province of Quebec is rich in minerals of all kinds.

Iron is found in almost every part of the country, but chiefly in the Laurentian formation, of which it is, so to say, the characteristic mineral. The magnetic oxyde is the most abundant of all the forms in which it occurs. In the township of Grenville, there is a bed of from six to eight yards in breadth, by about three hundred and fifty in length, which gives an analysis of 52·23 per cent. of metallic iron. Still more extensive deposits, one of which is more than half a mile long occurs, in the townships of Wentworth and Grandison. But the most important is that of Hull, where the mineral forms a bed of 90 feet thick and gives an analysis of 69·65 per cent of pure metal. There is a great deal of magnetic oxyde in the region of the St. Maurice, as well as in the neighborhood of lakes Nemicachingue and Culotte, near the head-waters of the river du Lièvre. On the banks of great lake Jacques-Cartier, there are extensive deposits of oxydulated iron, in the form of magnetic sand, in sufficient quantity to be worked. Lastly, oxydulated iron, in the form of magnetic sand, is found in unlimited quantities on the shores of the St. Lawrence from Tadousac to Natashquan and beyond it, a distance of about 400 miles. These deposits also cover, for thirty miles from the sea, the banks of several of the large rivers which flow into the St Lawrence, notably the river Manicouagan. The iron manufactured from this sand is of superior quality : tests made in England show that it has a tensile force even greater than that of the famous Lawmoor iron and that it can easily be worked cold as well as hot. The magnetic ore is also disseminated through certain crystalline rocks of the Eastern Townships and its presence has been noted in Sutton, county of Brome, Leeds, county of Megantic, and St. Francis, County of Beauce.



Limonite or *Bog Iron* exists in immense quantities to the north of the St Lawrence. In Kildare, there is a deposit covering a superficies of nine miles, as well as other large deposits in St Emilie and several other places. But the richest occur in the region of Three Rivers, where they have been worked since 1737 by the St Maurice forges and later by those of Radnor. Between the St Maurice and the river Batiscan, the ore covers a tract exceeding six miles in superficies and reaching a thickness of four to ten inches. From one deposit of less than three quarters of an acre in superficies 390 tons of the mineral have been extracted.

This ore produces an iron of superior quality : at the International Exhibition of 1867, Messrs. Larue & Co, proprietors of the Radnor forges, exhibited railway carwheels, manufactured from this iron, which, after running over 150,000 miles, showed no signs of deterioration.

Titanic Iron is found in many places, and notably at St Urbain, where there is a mountain composed entirely of it. This mine would be of inexhaustible richness if a way could be found to more easily smelt the ore.

Plumbago, another mineral characteristic of the Laurentian formation, has been discovered in many places in the Ottawa region, and notably in Buckingham, where it is worked to some extent. This mineral occupies an area of about 3000 acres in superficies.

Apatite or *Phosphate of Lime*, another mineral of the Laurentian system, occupies an area of about 500,000 acres in the valley of the river du Lièvre, where the work of extracting it is being carried on by a number of companies and on a large scale. In 1887, there were exported from the province of Quebec and derived from these mines, 22,070 tons of apatite valued at $390,526.

Mica occurs in several parts of the province : hunters and explorers have found workable deposits in the valleys of several rivers, and notably of the St. Maurice, the Great Peribonka, to the north of Lake St. John, and of the Grand Cascapedia, in the county of Bonaventure. Sir William Logan notes the existence of other deposits in Sutton, Bolton, Calumet Island, and especially in Grenville.

In our province, the characteristic minerals of the Appalachian region, that is to say, the mountainous region extending from the frontier of Vermont to Gaspé, are gold, copper and asbestos.

The auriferous deposits of Beauce and surrounding counties, Compton especially, cover an area of about 100,000 acres. Gold has also been found more to the eastward in the rear of the counties bounded to the south by the frontier of Maine. It is unquestionable that these deposits are very rich and would be much more productive, if they were worked by better processes and by companies able to devote to their development all the capital required. This is the opinion of Mr Ells, of the Geological Survey, who, after a thorough exploration of this region in 1884 and 1885, declared in his report that gold is found in nearly all the rivers and that, by making the necessary researches, the quartz containing the gold now found in the alluvial formations in the river bottoms, will eventually be discovered *in situ*. He also establishes the important fact

that the auriferous lands in the counties of Beauce and Compton decidedly belong to the same geological formation as those of Nova Scotia.

Copper has been found at many points and notably at Upton, Acton, Harvey Hill and Capelton. The ores of copper seem to be scattered generally throughout the Quebec group and the members of the Geological Survey have expressed the opinion that it will be found even in Gaspé. Nearly all these copper ores contain silver, which also occurs in the deposits of galena at St. Francis, in Beauce, Moulton Hills, in Compton, in the neighborhood of Gaspé, at Bay St. Paul and other places.

Asbestos forms the object of extensive workings in Coleraine, Thetford, Wolfestown and Danville. All these mines occur in the great zone of serpentine or volcanic rocks, which stretch with some breaks from the Vermont line to Gaspé. In Gaspé, there are large tracts of these volcanic rocks, in which serpentine occurs so abundantly as to form several mountains, and everywhere, in these places, indications of asbestos have been found—very fine specimens having been obtained by hunters.

Chromic Iron, another mineral of great value, is invariably found in the asbestos deposits. The deposits at Bolton, Ham, Melbourne and Mount Albert, in Gaspé, at Lake Nicolet and Wolfestown, are large enough to be worked.

The other more important minerals found in the province are the following :

Nickel.—On the banks of L'Assomption river, in the 11th range of the seigniory of d'Aillebout, at Bolton, Sutton, and especially at Orford, where it has been regularly worked.

Manganese.—At Stanstead, Bolton, Sutton, Cacouna, St. Anne de la Pocatière, and in the iron ores of the St. Maurice.

Antimony.—At South Ham, where it occurs in workable quantities.

Arsenic.—At St. Francis, County of Beauce, Moulton Hills, in Compton and at Harvey Hill, in the county of Megantic.

Molybdenum.—At St. Jerôme, Harvey Hill, and especially at the mouth of the river Quetachoo, in Manicouagan Bay, this mineral is found in workable quantity, which is a very rare thing. It is enclosed in a vein of gneiss six inches in diameter and forms nodules of three inches, and sheets with a breadth of as much as twelve inches and a quarter to an inch thick. This mineral is one of the rarest and most valuable.

Slate.—At Rockland, in the township of Melbourne and at Danville, where quarries are worked by two companies, who do a large business.

Marble.—At Dudswell, where a quarry is worked by a Sherbrooke company. This marble takes a very fine polish. It is of different colors : but the most prized is the " black and yellow ", this last color being derived from the dolomite in the rock. There are other quarries of marble in different other localities.

Ochres.—In several parts of the province, but chiefly in the environs of Three-Rivers, at St. Anne de Beaupré, and in immense quantities on the north shore of the St. Lawrence from the Saguenay downwards.

Petroleum.—Indications of this mineral have been noted at several points in the county of Gaspé, and an American company are actually making borings to discover the oil wells.

Natural Gas and *Mineral Waters* occur abundantly in the entire valley of the St. Lawrence from Three Rivers to Lake Champlain, a region which also contains immense peat bogs, capable of furnishing a fuel which was even used for a certain time by the Grand Trunk Railway for of its locomotives.

Granite.—In the Lake St. John region, there is a red granite superior to the Scotch article ; it takes a splendid polish and can be extracted in blocks of any size. Our grey granite of Stanstead is already largely used for building and ornamental purposes and also takes a fine polish.

Serpentine.—In the Eastern Townships and the region of the Notre-Dame mountains, entire mountains are composed of this marble, which occurs in such large quantities as to permit of its use not only for ornamental, but for building purposes.

According to the data collected to date, it may be asserted without exaggeration that the province of Quebec embraces 1,000,000 acres of iron-bearing lands, 500,000 acres of phosphate lands, 100,000 acres of asbestos lands ; 50,000 acres of copper lands, 100,000 acres of auriferous lands, and 10,000 acres of oil lands, or a total of 2,000,000 acres of mineral lands containing workable deposits.

IX

SOIL.

As regards the quality of the soil, our province may be divided into three distinct regions : the region of the Laurentides, the region of the Eastern Townships, and the valley of the St. Lawrence properly so termed, to which our geologists have given the name of the Champaign region.

The hard rocks of the Laurentides are intersected by numerous bands of crystalline limestone, which, by their softness and decomposition, have given birth to a great number of valleys of fertile soil. The slopes of the hills are covered with a layer of vegetable mould supporting an apparently abundant vegetation : but this soil has been partially destroyed by fire in the clearings, which has left the rock exposed. In the river valleys and bottoms of this great plateau, there are, however, considerable tracts of good land, with a deep soil and densely wooded. Here is found the greater part of our forest domain, especially those splendid forests of pine and spruce which supply the export trade and furnish to the province its principal source of revenue, next to the Federal subsidy.

The lands of the Eastern Townships embrace all the mountainous region from the Vermont frontier to the eastern extremity of the province. Like those of the Laurentides, these lands are formed from crystalline rocks,

but softer and producing from their decomposition a more abundant soil—a slightly sandy yellow loam admirably adapted to pasturage and the raising of Indian corn and other cereals. In Gaspé, the calcareous and Devonian formations, which are very extensive, furnish exceedingly rich agricultural land. The forests of this region include a good deal of hardwood, which is almost entirely lacking in many parts of the Laurentides.

The great plain of the St. Lawrence rests upon beds of primitive Silurian and Devonian rocks composed of sandstones, limestones, and schists. These beds are level and overlaid with clay, sometimes interstratified with sand and gravel. These superficial strata, which frequently attain a thickness of several hundred feet, are mostly of marine origin and date from the period when all this region was submerged by the ocean.

They are composed of strong and compact clays, which, in the newly cleared lands, are in many places covered with a thick layer of vegetable mould. The parts adjoining the region of the Eastern Townships, and especially that of the Laurentides, are covered with sandy deposits, chiefly in the neighborhood of Berthier and Three Rivers; but the central part, which is by far the largest, is composed of a tenacious blue clay, more or less calcareous, and of great thickness, constituting a rich soil, which produces crops of all kinds in abundance, but is particularly adapted to wheat raising. These good lands, whose fertility is proverbial, have, however, been exhausted by excessive cropping contrary to the very elementary principles of rational husbandry; they have been constantly sown and resown without regard to fallowing, rotation of crops, deep ploughing or manuring to restore their fertility; but, with the aid of an intelligent system of tillage and the help of manure and rest, they would quickly recover their natural qualities, as attested by the improvements which have been noticeable for some years past especially in the neighborhood of St. Hyacinthe and Montreal.

The immense region of Lake St. John is mostly characterized by an exactly similar soil and one fully as rich as that of the St. Lawrence valley, being composed of clay equally suitable for wheat raising.

X

ARABLE AND WOOD LANDS.

It has been stated above that the area of land comprised within the actual boundaries of the Province of Quebec amounts to 120,764,651 square acres. Strike off from this figure the 10,678,931 acres included in the seigniories and the 11,744,599 acres held in free and common soccage, and it will be found that the amount of available land, forming the public domain, is equal to an area of 98,341,121 acres. Of this domain, it is estimated that at least 20,000,000 acres consist of arable land. Allowing a lot of 100 acres to each family, these 20,000,000 acres represent an area sufficient to support a farming population of a million souls on the basis of five persons to each family.

The forest domain, actually under license for the manufacture of timber,

comprises an area of 47,037 square miles, leaving 68,136 miles still available. The principal woods of the region under license vary a little, as regards quantity in the different parts of the territory.

In the region of the Ottawa, covering 25,616 square miles, the most abundant species are the white and red pine. Then come the grey and black spruce, the red spruce or tamarac, the cedar, balsam-fir, ash, red birch, white birch, maple, elm, and basswood. There is also a little hemlock in some parts of the Lower Ottawa.

In the St. Maurice region, covering 8,699 square miles, pine and spruce occur in about equal quantities. There is also hemlock.

In the other regions, forming and area of 12,722 square miles, pine is no longer found in abundance, the prevailing timber being spruce, cedar, cypress or grey pine, hemlock, red birch, white birch and maple.

It is difficult to accurately specify the relative abundance of the different woods in the portion of the forest domain still available. However, the isolated and incomplete surveys, which have been made in these regions, establish the fact that there still remain several thousands of miles, at the headwaters of the Ottawa, in which red and white pine are found. Everywhere else, pine is only rarely met; the forests being composed of grey and black spruce, tamarac, balsam-fir, cypress and cedar.

These figures apply to the forests comprised within the actual limits of the province. The additional territory which we claim forms an area of 116,531 miles, three-fourths of which are in forest. The explorations of the Geological Survey in the region of the lake and river Abittibi have shown that there are workable pine and spruce in that district; and, as this region of the Abittibi is pretty extensive, it will offer to the lumber trade a vast field of operations.

From the 1st July, 1867, to the 31st July, 1888, the revenue from woods and forests has yielded $10,592,201.48. It amounted to $790,771.64 for the year ended on the 30th June last, and the officers of the Crown Lands Department are of opinion that it will probably maintain this figure for twelve years more.

XI

FLORA.

The flora of the province of Quebec is composed of nearly all the species common to the climates of the temperate zone. Our sylvan flora includes the following forest trees which are indigenous:

English names.	*Common French names.*	*Technical names.*
1 Poplar-leaved birch	Bouleau rouge	Betula populifolia
2 Canoe birch	Bouleau à canot	Betula papyracea
3 Yellow birch	Bouleau blc—merisier blc	Betula excelsa
4 Black birch	Merisier rouge	Betula lenta
5 Red birch	Bouleau noir	Betula nigra
6 Bitter hickory	Noyer dur	Carya amara

7	Shell-bark hickory	Noyer tendre	Carya alba
8	White-heart hickory	Noix blanche	Carya tomentosa
9	Hornbeam	Charme	Carpinus americana
10	White oak	Chêne blanc	Quercus alba
11	Post oak	Chêne gris	Quercus stellata
12	Red oak	Chêne rouge	Quercus rubra
13	Coffee-tree	Bon duc—Chicot	Gymnocladus canadensis
14	White or simple spruce	Petite épinette	Abies alba
15	Norway spruce	Epinette de Norvège	Abies excelsa
16	Black or double spruce	Epinette jaune — Grosse épinette	Abies nigra
17	Mountain maple	Erable bâtarde	Acer spicatum
18	White or silver maple	Erable blanche	Acer dasycarpum
19	Rock or sugar maple	Erable à sucre	Acer saccharinum
20	Striped maple	Bois barré	Acer pensylvanicum
21	Red maple	Plaine	Acer rulyrum
22	Black ash	Frêne noir—Frêne gras	Fraxinus sambucifolia
23	White ash	Frêne blanc	Fraxinus americana
24	Red ash	Frêne rouge	Fraxinus pubescens
25	Beech	Hêtre	Fagus sylvatica
26	American larch—Tamarac	Epinette rouge—Tamarac	Larix americana
27	Ash-leaved maple	Erable à giguières,	Negundo fraxinifolium
28	Butternut	Noyer tendre	Juglans cinerea
29	White or American elm	Orme blanc	Ulmus americana
30	Slippery or red elm	Orme rouge	Ulmus fulva
31	Iron wood	Bois dur—Bois de fer	Ostrya virginica
32	Large-toothed aspen—Balsam poplar	Peuplier—Baumier	Populus grandidentata—Populus balsamifera
33	Cotton-tree—Cotton wood	Liard	Populus canadensis
34	American aspen	Tremble	Populus tremuloides
35	White pine	Pin blanc	Pinus strobus
36	Banksian pine—Cypress	Pin gris—Cyprès	Pinus banksiana
37	Yellow pine	Pin jaune	Pinus mitis
38	Red or Norway pine	Pin résineux	Pinus resinosa
39	Button-wood	Platane de Virginie	Platanus occidentalis
40	Hemlock spruce	Pruche	Tsuga canadensis
41	Balsam-fir	Sapin blanc	Abies balsamifera
42	Double-balsam fir	Sapin rouge	Abies americana
43	White willow	Saule	Salix alba
44	Yellow willow	Saule jaune	Salix vitellina
45	Mountain ash	Cormier—Maskouabina	Sorbus americana
46	Arbor vitæ — White cedar	Cèdre blanc	Thuya occidentalis
47	Linden-Bass-wood	Bois blanc	Tilia americana

XII

FAUNA.

With very few exceptions, the fauna of our Province embrace all the wild animals common to the temperate zone of North America. The following table, taken from the census of 1871, indicates the most valuable of the fur-bearing species and the quantities killed during that year :

Musk-rats	184,830	Moose, caribou and red deer	6,740
Beaver	36,148	Bears	1,181
Mink	19,072	Other skins	19,700
Marten	11,842	Seals	35,400
Foxes	5,086		
Otter	3,438		
			323,437

The census of 1881 does not give the number of skins, but sets down at $163,310.00 the value of the furs collected during that year by our hunters. The *Tables of Trade and Navigation*, for the fiscal year ended on the 30th June, 1887, show that during that year the fur exports from the province of Quebec were as follows :

Raw furs	$638,525
Dressed furs	10,127
Total	$648,652

Our fauna include no dangerous wild beast : the bear is the most formidable, and, as every one knows, that animal is not in general dangerous. Among the reptiles, we have only the harmless adder.

The list of our feathered game is a large one and includes the spruce partridge, the ruffed grouse, the ptarmigan or white partridge, a number of varieties of the wild duck, notably, the eider, along the north shore of the St. Lawence, the teal, the Canada goose, the brant goose, the wild goose, the sea pigeon, the snipe, the woodcock, the black eagle, the bald eagle, the snowy owl, the bittern, the heron, and a host of other aquatic birds. Lake St. Peter and its environs are renowned as duck-shooting grounds. In the Lower St. Lawrence, and especially on the north shore, game is so abundant that a good shot can load himself down in a few hours. In the woods, partridge abound and the quantities of these birds killed every winter or rather every autumn are immense.

XIII

FISH.

Our gulf of St Lawrence and our myriad lakes and rivers abound with fish of all kinds and of the best qualities. Our deep-sea fisheries, which are inexhanstible, supply the export trade with cod, herring, mackerel, halibut and shad, without taking into account immense quantities of fish of minor value, such as the caplin, for instance, which is used as a manure by our farmers on the sea-coast. In our rivers, we have the salmon, the trout, the touladi or grey trout, the pickerel, the sea-bass, the pike, the maskinongé, which attains as much as five feet in length, the eel, the perch, the white fish, the *wiananiche*, a species of fresh-water salmon found in the upper waters of the Saguenay and in Lake St John, and many other kinds of lesser importance. Including the seal and porpoise, the annual value of the products of our deep-sea fisheries is about $1,500,000, and of that of our inland fisheries about half a million. The rivers which flow into the Lower St Lawrence and those of the

Bay des Chaleurs, especially the Grand Cascapedia river, have not their equal as fly-fishing salmon rivers. They also swarm with splendid trout, running all the way up to five and six pounds in weight. This superb fish is also taken in immense quantities in our lakes, and the province of Quebec is deservedly regarded by American and English sportsmen as the finest fishing ground in the world.

XIV

CLIMATE.

The astronomical situation of the Province of Quebec shows at once that it is included in the temperate zone. The extremes of temperature range from 30° and even more below zero to 90° above; but the mean or ordinary variations are about the same as in the European countries situated under the same latitude, as indicated by the following table:

	Spring.	*Summer.*	*Autumn.*	*Winter.*	*Year.*
New Carlisle	48° 2'	64° 7'	43° 2'	16° 9	40° 70'
Carleton	48° 1'	62° 7'	39° 3'	15° 5'	35° 93'
Father Point	42° 7'	54° 7'	38° 3'	14° 2'	37° 42'
Cape Rosier	29° 7'	55° 6'	39° 3'	13° 4'	34° 50'
Quebec	49° 1'	62° 2'	27° 3'	16° 3'	38° 78'
Montreal	54° 9'	65° 5'	30° 2'	2.° 5'	43° 02'
London	47° 6'	61° 0'	50° 7'	39° 2'	49° 60'
Liverpool	46° 2'	57° 6'	49° 1'	40° 5'	48° 30'
Glasgow	45° 9'	60° 1'	49° 0'	39° 6'	48° 60'
Edinburgh	45° 0'	57° 1'	47° 9'	38° 4'	47° 10'
Paris	50° 6'	64° 5'	52° 2	37° 8'	51° 30'
Berlin	47° 4'	64° 5'	49° 2'	31° 4'	48° 10'
St. Petersburg	35° 9'	60° 6'	40° 3'	18° 1'	38° 70'

For the six places given in the province of Quebec, the mean spring temperature is 45° 45' and 45° 71' for the seven European cities. The summer mean is 60° 9' in our province and 60° 8' in the European cities, whence it follows that with a difference of 0° 26 less in spring and 1 of 0° 1' in summer, the mean temperature of these two seasons is the same as in the most populous and advanced parts of Europe. Our autumn temperature is 12° and that of winter 18° 7' lower, with a difference of 9° 44' over in favor of the European countries for the whole year.

It may be added that the period exempt from frost is much longer than is required to fully ripen all the cereals, as shown by the following figures taken from the report of the *Meteorological Bureau of Canada* for 1882:

	Last Frost in the spring.	*First Frost in the autumn.*	*Interval without frost*
N. Carlisle	19 May, 28° 1'	2 Oct. 31° 1'	135 days
Carleton	14 " 24° 0'	29 Sept. 29° 5'	138 "
Father Point	19 " 30° 0'	25 Oct. 31° 3'	159 "
Quebec	15 " 32° 0'	14 Oct. 31° 0'	152 "
Montreal	1 " 22° 9'	20 Oct. 31° 3'	172 "

A somewhat erroneous idea prevails, as regards the severity of our winters.

Judging the temperature exclusively by the thermometrical indications, European writers, who have simply passed through the country, have arrived at very false conclusions. It is very true that during the winter the mercury falls lower in our province than in England, for instance ; but, as with us the sky is always clear and the air pure and dry, the cold in our lowest temperatures is less penetrating and is less felt than in the damper climates of Europe and especially of England. This is the testimony of Englishmen, who have resided for a length of time in our country and studied the climate with the greatest care ; among others, Anderson, Gray and Lambert.

Moreover, our winters possess the double advantage of supplying us with the best roads possible for lumbering in the woods, which constitutes the most important branch of our *extractive* industry and also of admirably preparing the land for sowing. The action of the frost pulverizes the soil, which thus becomes extremely friable and only the slightest harrowing is needed to convert the fall ploughings into regular garden mould. While giving us excellents roads for the hauling of heavy loads, the snow also protects the grass of the meadows against the frost, which under ordinary circumstances never affects it in any way.

Our summer temperature is splendid, especially, in the region of the Lower St. Lawrence and the Bay des Chaleurs. At that season, our magnificent watering-places are frequented by thousands of persons from all quarters of the United States and the western provinces of Canada, a great number of whom have built villas for themselves at these sea-side resorts.

In fine, it is established by vital statistics and by the life insurance companies that the province of Quebec enjoys one of the most healthful of climates and one as calculated to maintain the vital energy as it is to favor longevity. Endemic diseases are absolutely unknown and, in our rural districts, physicians would have a hard time of it earning a livelihood, if their positions were not somewhat bettered by other lucrative occupations.

XV

POPULATION.

In 1881, the population of our province, as established by the census, numbered 1,359 027 souls apportioned as follows between the different nationalities ;

French.....	1,073,820	Scotch.....	54,923
Irish.....	123,749	Germans.....	8,943
English.....	81,515	Others.....	16,077

This gives the following proportions for the different nationalities :

Races.	*Number.*	*Proportion.*
French.....	1,073,820	79.02o/o of the total
Irish.....	123,749	9.11o/o "
English.....	81,515	6.01o/o "
Scotch.....	54,293	4.01o/o "
Other races.....	25,020	1.85o/o "

For the decade from 1871 to 1881, the different races showed the following increases :

French	144,003	or 15.49o/o
Irish	1	or 0.00o/o
English	11,693	or 16.74o/o
Scotch	5,465	or 11.05o/o
Other races	6,349	or 34.00o/o

And, supposing that during the present decade, the increase continues in the same proportions for each race, the following will be the result :

Races.	*Number in* 1881.	*Increase.*	*Number in* 1891.
French	1,073,820	166,334	1,240,154
Irish	123,749	0	123,749
English	81,515	4,899	86,414
Scoeth	54,023	2,202	57,125
Others	25,020	462	25,482
	1,359,027	173,897	1,532,924

The proportions of each race will then be in 1891 : French 80.90 o/o; Irish 8.08 o/o ; English 5.64 o/o ; Scotch, 3.72 o/o ; other races 1.66 o/o.

When it is recalled that at the time of the cession of Canada to Great Britain, in 763, the French population numbered at the most 70,000 souls, one cannot fail to be struck by the prodigious development of our race during these one hundred and twenty five years. The rate of increase exceeds 1,434 per cent. or more than 14 to 1. By taking this rate as a basis of calculation, we arrive at the conclusion that in fifty years the French population of the province will be about nine millions, if no extraordinary circumstances occur to retard the progression. This will depend on the impetus given to colonization, because we are above all a colonizing and an agricultural people. It was by devoting ourselves especially to agriculture that we have preserved in the past and that we will preserve in the future the frugal habits, the purity of manners, and the physical and moral strength which so pre-eminently distinguish our race. Let other races and the exceptions among our own practise industry and trade ; but let us devote ourselves to opening up the country to agriculture and to the possession and cultivation of this cherished soil, which we have conquered for civilization.

But the figures relating to the province of Quebec do not give a correct idea of the expansion of the little French colony which established itself at the beginning the XVIIth century on the shores of Acadie and the banks of the St. Lawence. The French Canadians have spread from our province into those to the west. They already form large groups in Ontario and there is a good number of Canadians and French half-breeds in Manitoba, in the North-West Territories and in British Columbia, without including those in the United States who number over a million, so that the descendants of the 75,000 French or thereabouts, who were in New France and Acadie in 1760, form today a population of over 2,500,000 souls.

In the three larger provinces of the Canadian Confederation, the French population show the following increase for the decade ended in 1881 :

	1872	1881	*Increase.*
Ontario	75,383	102,743	27,356
New Brunswick	44,907	56,625	11,718
Nova Scotia	32,833	41,219	8,386
	153,123	200,587	47,464

By taking as the basis of calculations for the current decade, the percentage shown by the preceding decade, the following table is formed :

	o/o	*Increase.*	*Pop in* 1891
Ontario	36.29	37,285	140,028
New Brunswick	21.11	14,773	71,398
Nova Scotia	25.54	10,525	51,746
		52,585	263,172

The different census previous to 1881 do not indicate the French population of Prince Edward Island ; but, allowing an increase of 25 per cent. for the present decade, we get the following figures :

French population in 1881,	10,751
" " in 1891,	13,438

The census taken in Manitoba in 1885 shows a decrease in the French population, which is only set down at 6,821 instead of 9,049 according to the census of 1881. This last census gives to the North-West Territories and British Columbia a French population of 3,812, which the increase during the current decade should raise to 5,000, in 1891.

Summing up all these data, it will be found that the French population of Canada, outside of our province, will probably be as follows in 1891 : Ontario, 140,028 ; New Brunswick, 71,398 ; Nova Scotia, 51,746 ; Prince Edward Island, 13,438 ; Manitoba, 6,821 ; North-West Territories and British Columbia, 5000, making in all 288,431.

As for the French Canadian population of the United States, the most conscientious research leads to the conclusion that it numbers 1,000,000. This is about the figure established by the Abbé Druon about fifteen years ago ; there has since been a large increase, so that the figure above given cannot be taxed with exaggeration.

The deduction from the foregoing is that the French Canadian population of Canada and the United States will probably reach the following figures in 1891 :

In Canada.

In the province of Quebec	1,240,154	
In the other provinces	288,431	
		1,528,585
In the United States		1,000,000
Total		2,528,585

If the French Canadian population of the United States progress in the proportion above indicated for the province of Quebec, in fifty years there will be in the two countries from fifteen to eighteen millions of French Canadians.

The census of 1881 gives the following enumeration of the different religious persuasions in our province: Catholics, 1,170,718; Anglicans, 68,797; Presbyterians, 50,287; Methodists, 39,221; Baptists, 8,843; other denominations, 21,151. From 1871 to 1881, the Catholic population showed an increase of 150,866 or 14.79 per cent. Supposing the progression continues in the same ratio, the present decade will give an increase of 173,149, which will bring the number of Catholics in 1891 to 1,343,867 or 87.97 per cent. of the total population, only leaving 2.33 per cent. for the Protestant population and other religious denominations.

As regards callings, the census of 1881 groups our population as follows:

Agricultural class.....	201,963	or 48.68o/o
Industrial ".....	81,643	or 19.67o/o
Commercial ".....	34,346	or 8.27o/o
Domestic ".....	24,279	or 5.85o/o
Unclassified ".....	72,635	or 17.50o/o

As will be seen, the agricultural class form nearly one half of the population.

The last census gives to the twenty-five cities and towns then in the province the following populations: Montreal, 175,182; Quebec, 62,446; Levis, 12,175; Three Rivers, 9,296; Sherbrooke, 7,222; Hull, 6,890; Sorel, 5,791; St. Hyacinthe, 5,321; St. John's, 4,314; Valleyfield, 3,906; Nicolet, 3,764; Joliette, 3,268; Lachine, 2,406; Longueuil, 2,335; Fraserville, 2,291; St. Jérôme 2,032; Chicoutimi, 1,935; Farnham, 1,880; Iberville, 1,847; Beauharnois, 1,499; Rimouski, 1,417; Terrebonne, 1,398; Louiseville 1,381; L'Assomption, 1,313; Berthier, 1039; which make a total urban population of 322,348 or 23.71 per cent. and leave the rural population at 1,036,679 or 76.29 per cent.

The population of Montreal as above given takes in that of the small suburban parishes and villages, which, for commercial purposes, virtually form part of the city. For the same reason, the population of Bienville and Lauzon is added to that of Levis, of which those villages commercially form part.

From 1871 to 1881, the population of Montreal increased 31.3 per cent. If the increase continues in the same ratio, it will amount to 44,053 for the present decade, which will bring the figure of the population up to 184,690 at the next census in 1881. The population of the suburban villages was 34,455 in 1881; if it increases 25 per cent. during the current decade, it will reach 43,043 in 1891 which will make the population of Montreal, including these villages, nearly all of which are now annexed to the city, 227,843.

XVI

AGRICULTURAL INDUSTRY.

Much the greater portion of the population are engaged in the tillage of the soil. At the time of the census of 1881, there were 4,147,894 acres under

cultivation, 2,207,422 acres in pasture, and 154,858 acres in gardens and orchards, forming a total of 6,410,264 acres under tillage or about a twentieth of the total area of the lands comprised in the province of Quebec. The yield of cereals was as follows in 1881:

Grains.	*Bushels.*	*Value.*
Oats	14,[illegible]207 at 40c	$7,[illegible]283.80
Peas and beans	4,170,458 " 80c	3,336,366.40
Buckwheat	2,041,670 " 60c	1,225,002.00
Wheat	2,019,004 " $1	2,019,004.00
Barley	1,751,539 " 70c	1,226,077.30
Indian corn	888,169 " 60c	532,901.40
Rye	430,242 " 75c	322,681.50
	31,291,285	$16,658,169.60

The meadows yielded in 1881:

Tons of hay	1,612,104 at $6.00	$9,672,624.00
Bushels of hay seed	119,306 at $1.50	178,959.00
		$9,851,583.00

The crop of roots in 1881 was as follows:

Potatoes	14,873,287 at 25c	$3,718,321.75
Turnips	1,572,476 at 20c	314,495.10
Other roots	2,050,904 at 30c	615,271.20
		$4,648,088.15

The flax crop yielded for the same year:

Flax and hemp, lbs	865,340 at 05c	$43,267.00
Flax seed, bushels	65,995 " $1.00	65,995.00
		$109,262.00

For the produce of the gardens and orchards in 1881, we find:

Apples, bushels	777,557 at $1.00	$777,557.00
Other fruits "	155,543 " 1.00	155,543.00
Tobacco lbs	2,365,581 " 0.10	235,658.10
Hops "	218,542 " 0.05	10,927.10
		$1,179,685.20

The animals slaughtered or sold and the products of animals are indicated by the following figures for the year in question:

Horned cattle	160,207 at $30.00	4,806,210.00
Sheep	436,336 " 2.50	1,090,840.00
Swine	333,159 " 10.00	3,331,590.00
	929,702	$9,228,640.00
Wool, lbs	2,730,446 at 20c	546,109.20
Honey "	559,024 at 10c	55,902.40
Butter "	30,630,397 at 15c	4,594,559.55
Creamery butter, lbs		341,478.00
Cheese, lbs	559,278 at 10c	55,927.80
Factory cheese, lbs		5,464,454.00
		$20,487,070.95

The foregoing figures show the importance of our dairy industry, whose products amounted in 1881 to $10,456,419.35, that is to say, $4,936,037.55 for butter, and $5,520,381.80 for cheese. The capital invested in creameries was $97,027 and the number of persons employed 151. Cheese factories employed 2003 hands and represented an investment of $1,021,435. Our cheese is of superior quality and much sought after in the English market, where it commands the highest prices.

The products of domestic industry for 1881 amounted as follows:

Cloth and flannel, yards	2,958,180 at 50c	$1,479,090.00
Linen, yards	1,130,301 at 20c	226,060.20
	4,088,481	1,706,050.20
Maple sugar, lbs	15,687,835 at 10c	1,568,783.50
		$3,274,833.70

The value of the products of agricultural industry is summed up in the following figures for 1881:

Products of cereals	$16,658,109.00
" " hay crop	9,851,583.00
" " root crop	4,648,088.15
" " flax crop	109,262.00
" " gardens and orchards	1,179,685.20
" " animals and their products	20,487,070.95
" " domestic industry	3,274,833.70
Total value	$56,208,632.00

To day, the annual value of the agricultural products must amount to at least sixty millions.

It is somewhat difficult to indicate with absolute accuracy the value of the agricultural property, —real and moveable—as the last census furnishes hardly any information on this head: but by proceeding approximately some idea of its importance can be obtained.

According to the municipal reports for 1886, the value of the real estate in the municipalities was then estimated at $181,559,993.00.

With regard to the farm stock, the census of 1881 supplies the following figures, to which as in the case of the agricultural products, we add an estimate of the values according to current prices:

Horses	225,006 at	$75.00	$16,875,450.00
Colts	48,846 "	30.00	1,465,380.00
Working oxen	49,237 "	20.00	984,740.00
Milch cows	490,977 "	20.00	9,819,540.00
Other horned cattle	409,119 "	10.00	4,091,190.00
Sheep	889,833 "	2.00	1,779,666.00
Swine	329,199 "	5.00	1,645,995.00
	2,442,217		$36,661,961.00

Agricultural implements, which are not mentioned in the census of 1881, were enumerated as follows in that of 1871 :

Light waggons	240,018	à $30.00	$7,200,540.00
Carts	404,966	" 15.00	6,074,490.00
Ploughs, harrows and cultivators	206,663	" 10.00	2,066,630.00
Reapers and mowers	5,149	" 100.00	5,114,900.00
Horse rakes	10,401	" 20.00	208,020.00
Threshers	15,476	" 150.00	2,121,400 09
Fanners	37,262	" 10.00	372,620.00
			$23,158,600.00

At least, $7,000,000 may be a added to this total for the increase since 1871 and for the value of the other farm plant not embraced in the above enumeration, which will carry the total amount to $30,158,600.

The value of the property employed by the agricultural industry as a means of production is therefore about as follows :

Real estate	$181,559,993.00
Stock	36,661,961.00
Waggons and agricultural implements.	30,158,600.00
Total	$248,380,554.00

XVII

FOREST INDUSTRY.

After agriculture, this is the most important extractive industry of our province. The census of 1881 supplies us with the following information on the subject :

Number of saw mills	1,729
" of mill hands	12,461
Annual wages	$ 2,287,291
" value of raw material	. 5,101,884
" " " products	$10,542,649
Shingle mills	377
Number of persons employed	868
Annual wages	$ 33,393
" value of raw material	$ 60,665
" " " products	$ 128,718

The annual value of sawn lumber and shingles forms a total of $10,671,357 and the wages of the mill hands amounted to $5,135,277. To the value of the sawn lumber, as above given, must be added that of the lumber delivered to local consumption and the export trade in the form of round timber, building or square timber, railway ties, wood for ship building, carriage-making, cooperage and several other industries, which bring up the value of the forest products to more than $20,000,000 a year. The wages and number of men employed in the forest to fell and prepare the timber are as large as those of the labor employed in the mills, which carries to about 25,000 the number of persons engaged in the forest industry and to upwards of $4,500,000 the *amount of* their annual wages.

From 1867 to 1887 inclusively, the State forests supplied the trade with the following quantities of the different woods :

Saw Logs.

Pine	38,373,604	
Spruce and hardwood	17,410,683	
		55,784,287
Pine boards, feet		684,559
Spruce and hardwood boards, feet		19,149,333

Square Timber.

Red and white pine, cubic feet	64,874,150
Birch, elm and maple " "	4,734,227

Round Timber.

Small tamarac, white spruce, pine, boom timber, etc., linear feet	10,798,237
Futtocks, knees, pickets, railway ties, etc, number	3,008,388
Fire-wood, lath-wood, hemlock bark, etc., cords	159,415

These figures give an idea of the wealth of our forests and the importance of our forest industry ; nevertheless, they do not embrace the woods cut from forests owned by private persons, which also contribute largely to the local consumption and export trade.

XVIII

MINING INDUSTRY.

We unfortunately have no accurate statistics with regard to this industry. All the information we possess on the subject is to be found in the *Tables of Trade and Navigation*, which do not indicate exactly whence the exported minerals are derived.

Asbestos.—In 1886, there were eight asbestos mines in operation : at Thetford : those of the Boston Asbestos and Packing Company ; of King Brothers ; of Irvine, Johnson & Co ; and of Ross Ward & Co. ; at Black Lake, those of Mr Frechette ; of the Scottish Canadian Company: and of the Anglo-Canadian Company ; and at Belmina, in Wolfestown, that of Mr John Bell, of London.

Our asbestos mines were discovered in 1878 and from that period to the 30th June 1886, they turned out for export 10,024½ tons of this mineral, valued at $624,489. The cost of extraction is from $20 to $25 per ton, representing nearly exclusively the price of the labor employed, which goes to show that the working of these mines has in eight years benefitted the workmen employed to the extent of about $220,000 in wages, leaving more than $400,000 for the proprietors. The output of the mines for 1886 was 3,458 tons valued at $206,251.

Copper.—The only mines in operation are the Albert and Crown mines, at Capelton, near Sherbrooke, and those of Harvey Hill, in the county of Megantic. The output of the Capelton mines in 1886 amounted to 43,906 tons of ore, containing 3,336,810 lbs of copper. From 1868 to 1887, the value of the ores of copper exported from the province was $3,554,815 or an annual average of $177,740.

The *Excelsior Copper Company*, with a capital of £450,000 sterling, has, within a few weeks past, begun to work the Harvey Hill mines, where it actually employs fifty men. It owns 4100 acres of copper-bearing lands and an extensive plant. The veins, according to sir William Logan's description of them, have a gangue of quartz occasionally mixed with calc-spar, pearl-spar and chlorite, and contain rich ores of copper ; some of them yielding the variegated and vitreous species and others copper pyrites. These are, however, considered secondary in importance to the interstratified beds in which the sulphurates of copper are disseminated in the slate rock. These beds contain the yellow and variegated ores, the latter generally predominating ; the veins are well defined, are from 2 to 7 feet in width and as much as 10 feet thick, and carry a rich ore, which has assayed as much as 70 per cent, and upwards of metallic copper. Mr Pierce, agent of the Halifax Copper Company, has in a report pronounced these mines to be the richest in Canada, and this report has been confirmed by Dr Bourke, geologist and analyst, who considers them the richest copper mines in America.

The company calculates upon an output of 100 tons of ore per day, with the help of the large additions which it is making to the plant. Its operations are greatly facilitated by the fact that these mines are only distant seven miles from Broughton station on the line of the Quebec Central Railway. The London board of directors is composed of Col Malleson, Sir H. Elphinstone, Sir James Marshall, Mr S. P. Appleyard, vice-president of the Halifax Banking Company, Hon. H. Mercier, Premier of Quebec, and Hon. W. W. Lynch, ex-Commissioner of Crown Lands. The directors in Canada are Hon. Messrs Mercier and Lynch and Mr J. N. Greenhields, barrister, of Montreal. There is every reason to hope that this company will give a powerful impulse to our copper mines.

Phosphate of Lime.— Upwards of twenty-five mines of phosphate are in operation in the townships of Hull, Wakefield, Templeton, Buckingham and Portland, in the county of Ottawa, affording employment to about 800 men. Since the discovery of these mines about 1875, down to the year 1887 inclusive, there has been extracted from them about 137,000 tons of the mineral and the value of the phosphate exported from the province of Quebec from 1877 to 1887 has been $3,094,673. In 1887, 22,070 tons were exported, valued at $390,226. Our phosphates are of superior quality, carrying generally 80 to 85 per cent, and, in keeping with the increase and improvement of the means of transport, this industry will develop almost without limit, as our phosphate lands are immense and the demand for their products is still more so.

Gold.—Our auriferous deposits of Beauce and Ditton are being profitably worked by a number of private persons ; but it is impossible to procure reliable information respecting the results of their operations. It is admitted by all the competent authorities that gold mining would constitute a paying industry of it were prosecuted with the assistance of the necessary capital and experience.

Gold mining in Beauce has, within a few months, taken a fresh and vigorous start. Several English and American capitalists are about to engage

in this industry. Recently, Mr Lockwood, who owns 80,000 acres of auriferous lands, sold 8,000 acres of them to Messrs McArthur Bros & Co for $10,000. Shortly afterwards, the Messrs McArthur sold a portion only of these 8,000 acres for $50,000. It is claimed that Mill stream, where diggings have been begun, is richer than the Gilbert river, where about $2,000,000 worth of gold were taken out of twenty acres of ground. The establishment of good quartz-crushing mills will also contribute largely to the development of operations: at least, this is the opinion of Mr Ells, of the Geological Survey of Canada, who fully explored the auriferous lands of Beauce and Compton in 1884 and 1885.

Iron.—The Hull iron mine (magnetic oxyde) is worked by a company, which forwards the raw ore to the United States. The iron derived from the deposits of bog ore or limonite in the region of the St-Maurice is smelted in the Radnor forges and exported in the form of pig iron.

Marble.—The Dudswell quarry is operated by a company, which has already done considerable work.

Slate.—The Rockland and Danville quarries supply the trade with large quantities of slate. A railway, four miles long, has been constructed to carry the output of the Rockland quarry to Richmond, on the Grand Trunk. In 1886, the production was 5,345 tons, worth $54,675 at the quarry.

Several other mining operations of some importance are carried on in the province, but, in regard to them, it is impossible to procure information worthy of mention.

It may be added that what we chiefly need to give to our mining industry all the immense development of which it is susceptible are capital and practical knowledge—the raw material being abundant. Worked under proper conditions, our mines might be easily made to yield five to six millions of dollars a year.

XIX

FISHERIES.

The following is the information respecting this industry furnished by the official reports for the year 1887, commencing with the coast and inland fisheries of the province.

Kinds of Fish.	*Quantity.*		*Value.*
Salmon, salt	brls	770½	$ 12,325.00
" fresh	lbs	529,763	103,250.00
" canned	lbs	8,448	1,267.20
Cod, salt	quintals	164,100	656,400.00
Haddock	"	1,237	4,948.00
Halibut	lbs	81,347	8,134.70
Herring, salt	brls	31,607	142,231.00
" smoked	boxes	9,762	2,440.50
Shad	lbs	743,612	44,016.72
Eels	"	1,348,348	80,900.88
" salt	brls	152	1,520.00



Kinds of Fish.		*Quantity.*	*Value.*
Mackerel, salt	"	628	7,536.00
Sard nes	"	960	2.880.00
Sturgeon	lbs	475,400	28,884.00
"	brls	323	1,615.30
Trout	lbs	530,700	53,076.00
" salt	brls	153	1,530.90
Winoniche	lbs	55,000	3,300.00
Bar and white fish	doz	5,001	6,251.25
White fish	lbs	75,730	6,058.40
Maskinongé	"	90,780	5,986,00
Bass	"	134,749	8,068.74
Pickerel	"	473,583	28,408.98
Pike	"	366,650	18,332.50
Tomcods	"	500,000	15,000.00
Cod t ngues and sounds	brls	953	9,530.00
Smelts	lbs	4,000	120,00
Lobsters, canned	"	857,098	102,851.76
Small fish and mixed fish	brls	20,037	86,995.50
S al skins	numb..r	22,799	22,799.00
Porpoise skins	"	656	2,640.00
Fish for bait and manure	brls	134,769	116,081,50
Fish oil	gals	268,109	107,243.60
Guano	Tons	60	3,000.00
Local consumption	brls	19,485	77,940.00
To.al in 1887			$1,773,567.43

The value of the products of the fisheries of the Gulf of St Lawrence amounted to $1,302,457.36, which leaves $471,110.07 for the fisheries of other parts of the province. The number of men employed in the different fishing operations is 12,105, that is to say, 8,554 in the Gulf fisheries and 3,561 in the river and lake fisheries. The capital invested in this industry is $781,156, of which $684,192 is in the Gulf region and $96.964 in the rest of the province.

We may add that both the deep sea and river fisheries of the province of Quebec, are the most prolific and the richest, probably, in the whole world. Capital alone is needed to increase their productiveness, which might then be counted by millions.

A new and vigorous impetus will be given this year to this industry by an association under the name of Le Bouthilier Bros. Company, which has just been formed by Mr W. Fauvel, of Paspebiac. with a capital of $50,009, of which 60 per cent. has been paid up. This firm, of which Hon. H. Mercier, Premier of Quebec, is a member, is composed, among others of Messrs William Le Bouthilier, Fauvel, of Paspebiac, Alphonse Charlebois, Joseph Whitehead, John H. Botterel, William Shaw, Richard Turner and Joseph Louis, of Quebec, and has purchased all the properties of the house of Le Bouthilier & Brothers, worth $100.000 at the lowest figure. Mr Fauvel has gone to Europe to complete arrangements and will return early this winter in order to prepare in time for next summer's fishing.

XX

MANUFACTURING INDUSTRY.

Regarding this industry, the census of 1881 supplies the following information :

Number of persons employed	85,763
Annual wages of said persons	$ 18,333,162
Capital invested	52,216 992
Value of raw materials	62,563,967
Value of articles produced	104.662,258

The leather industry, which is by far the most important, employed, in the work of tanning, shoe-making and saddlery, 22,558 persons and, with an invested capital of $10,842,985, produced $28,268,803, as follows for the whole province :

	Persons employed.	*Capital invested.*	*Products*
Shoemaking	18,949	$6,491,042	$17,895,903
Tanning	2,968	4,028,394	9,686,248
Saddlery	641	323.549	686,652
	22,558	$ 10,842,985	$ 28,268,803

The city of Quebec is the centre where the leather industry—tanning and shoemaking—is carried on on a larger scale than any where else in Canada, and, perhaps, in the whole of North America. In 1881, it employed 480 men earning $130,114 a year, consumed $1,741,715 worth of raw materials, and produced $ 2,101,774. According to the most competent authorities, the same industry employs to-day 1300 persons, earning $375,000 a year, consumes annually $120,000 worth of hemlock bark, and $1,150,000 worth of raw hides, and furnishes more than $2,500,000 worth of leathers. The principal tanning establishments are those of Messrs Olivier and Gaspard Rochette, Elie Turgeon, Désiré Guay, Felix Gourdeau and Pion & Co. In 1881, the manufacture of boots and shoes employed 2,897 persons, earning wages to the extent of $467,811, consumed $1,588,973 worth of raw materials, and turned out $2,432,006 worth of boots and shoes. It is estimated that to-day it gives employment to 4,000 hands, earning $1,200,000, and produces upwards of $4,000,000 worth of boots and shoes. The leading manufacturers are Mr Octave Migner, Hon. G. Bresse, Messrs. Botterell, Ritchie, Woodley, Marsh, Dion & Co, Isaie Boivin and the "Quebec Shoe Company" The French Canadians have been wonderfully successful in this industry, as well as in tanning.

Then, for the whole province and in the order of their importance, come the following industries :

	Number of persons.	*Capital invested.*	*Value of products*
Milling	1,791	$ 3,697,060	$ 8,861,752
Iron manufactures	7,165	6,467,705	8,764,678
Sugar refining	493	1,600,000	6,800,000
Furs and hats	1,583	1,403,532	2,456,711

	Number of persons.	*Capital invested.*	*Value of products.*
Woven Fabrics :			
Cotton	1,500	1,350,000	1,608,434
Wool.....	1.226	1,567,365	1,531,899
Silk.....	134	86,400	123,900
India rubber goods.	524	850,000	769,500
	14,416	$ 17,022,662	$ 30,916,874

It is estimated that, since 1881, there has been an increase of one-third in our manufacturing industry, which gives an idea of its present importance. For this kind of work, the French Canadians are endowed with remarkable aptitude and skill.

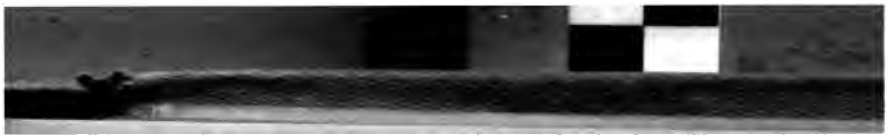
In proportion to population, the city of St.Hyacinthe is probably the mots remarkable of all the cities of the province in point of manufactures. The following are the principal factories of that city :

The St.Hyacinthe Manufacturing Company, woolens.....
The Granite Mills, knitted goods ;
Louis Côté & Frère, boots and shoes ;
Seguin, Lalime & Co "
J. Aird & Co "
Duclos & Payan, tannery ;
Moseley & Co, "
Eusèbe Brodeur, church organs ;
Casavant Frères " "
O. Chalifoux & Fils, agricultural implements ;
Bedard & Fils, " "
F. X. Bertrand, machinery ;
J. Fréchette, "
L. P. Morin, wood work :
Paquette & Godbout, "
The Compagnie Manufacturière, grist mills ;
The Compagnie de Peinture, paints.
These different industries employ about 1100 hands.

XXI

TRADE.

By its geographical position, as well as by the splendid seaports furnished it by the river St. Lawrence, which enable sea-going vessels to ascend as far as Montreal, the province of Quebec commands the trade of the whole of Canada and even of the finest portion of the Western States of the American republic. The St. Lawrence is the shortest, most direct and least expensive channel for the import and export trade of the immense territory lying to the west of our province and extending as far as the Mississippi valley, north of the latitude of Chicago. Montreal, the centre towards which converge the great lines of the Canadian railway system—the Grand Trunk and Canadian Pacific—is also the connecting point between ocean navigation and that of



Lakes Ontario, Erie. Huron, Superior and Michigan—Montreal, we say, is at the head of the entire Canadian trade and also serves as the distributing point of a great part of the products of the American Western States. Consequently, nearly one half of the import and export trade of the whole of Canada is done through the province of Quebec.

For the year 1887, the total imports of Canada represented $112,892,236 and the exports $89,515,811, making a total commercial movement of $202,408,047. The figures given by the *Tables of Trade and Navigation* show $50,153,673 of imports and $40,364,720, of exports for the province of Quebec, making a total trade of $90,518,393 or 44.72 per cent. of the trade of the whole Dominion. From 1869 to 1887, inclusively, the movement of trade in the ports of our province was as follows :

	Imports.	*Exports.*	*Tonnage : Entered inwards and outwards.*
1869	$ 30,940,341	$ 28,223,268	2,246,891
1870	32,883,916	37,807,468	2,778,069
1871	43,094,412	39,021,705	2,582,369
1872	49,376,175	41,823,470	2,903,527
1873	53,715,459	44,408,033	2,859,563
1874	51,577,072	46,393,845	2,728,566
1875	51,961,282	39,745,729	2,545,495
1876	35,035,091	37,876,815	2,404,851
1877	36,752,990	37,782,284	2,766,779
1878	32,036,858	37,392,287	2,677,304
1879	30,924,842	29,750,512	2,327,801
1880	43,544,132	41,447,209	2,804,191
1881	51,071,013	48,965,087	3,225,274
1882	53,105,257	38,972,121	2,730,368
1883	55,909,871	42,642,986	2,998,976
1884	49,122,472	42,029,878	3,207,832
1885	46,733,038	39,604,451	2,853,354
1886	45,001,694	38,171,339	2,995,972
1887	50,153,673	40,364,720	2,953,094

For this period of nineteen years, the aggregate of the principal exports of the province was :

Products of the	farm	$402,025,376
" "	forest	211,380,958
" "	fisheries	14,737,096
" "	mine	8,448,422
		$636,591,852

The exports of the year 1887 were made up as follows :

Products of the	farm	$28,135,675	or	69.75o/o
" "	forest	8,480,764	"	22.00o/o
" "	mine	925,676	"	2.29o/o
" "	fisheries	621,707	"	1.66o/o
" "	manufactures and other articles	1,727,410	"	4.30o/o

The total exports of products of the farm for the period embraced between 1869 and 1887, and for the year 1887 separately, were made up as follows :

Grains:	1869–87	1887
Wheat	$106,467,296	$6,481,748
Rye	1,622,485	52,071
Barley	4,174,986	29,701
Oats	7,488,140	374,093
Peas	27,046,102	1,722,527
Indian corn	27,090,892	1,646,614
Beans	158,660	1,525
Flax seed	148,539	10,296
Other grains	549,596	9,835
	$174,746,696	$10,328,410
Flour:		
Wheat flour	$27,588,654	$1,474,637
Oatmeal	2,822,314	144,593
Other flour	109,153	11,022
Bran	323,363	35,966
	$30,843,484	$1,666,218
Hay	$8,962,276	$659,719
Straw	96,783	17,687
Vegetables	265,084	4,179
Potatoes	973,680	3,212
Tobacco	276,612	27,388
Hops	580,304	543
Miscellaneous	364,033	9,458
	$11,518,772	$722,186
Animals:		
Horses	11,182,658	846,924
Horned cattle	36,278,532	5,343,472
Sheep	7,268,078	745,735
Swine	138,105	112
Fowl	787,210	29,580
	$55,624,583	$6,965,829
Products of Animals:		
Hides	$2,006,303	$225,691
Bones	243,659	12,597
Eggs	2,478,210	187,991
Lard	2,159,701	12,973
Tallow	422,065	1,268
Beef and mutton	1,168,247	2,650
Salt pork	3,371,779	36,221
Bacon	6,958,342	188,062
Tongues, etc	820,80	26,538
Butter	37,133,586	816,352
Cheese	65,853,252	5,992,928
Other products	760,570	19,047
	$123,357,794	$7,522,358

The Tables of Trade and Navigation also classify among, the products of the farm, tobacco, fruits and several other articles of minor importance, which are not included in the above figures. For the fiscal year, 1887, these different articles formed a total of $930,674, which increases to $28,135,675 the total value of the exports of products of the farm.

A considerable portion of the agricultural products, exported from our province, comes from Ontario, Manitoba, the North-West Territories and the United States The St. Lawrence offers so many advantages, especially for the exportation of live stock, that the Chicago exporters are forced to adopt it.

What most taxes the animals during the long journey between Chicago and Liverpool is the sea voyage, when they are constantly tormented by the rolling and pitching; apart from the fact that the sea is relatively calm in the Gulf whence there only remain about 2,000 miles of ocean travel, Quebec is 318 miles nearer to Liverpool than is New-York. The Quebec route shortens by so much the total journey and saves from 1200 to 1500 miles of rough sea voyage, which renders the transportation more comfortable for the cattle and less expensive for the shippers, seeing that the animals have to be fed during a shorter time. If the port of Quebec could offer to large steamers the wharfage and other accommodation required for cattle transhipments, it is probable that the cattle trade *via* the St. Lawrence would greatly increase.

XXII

MARITIME TRADE.

For the year 1887, the shipping trade of the ports of the province shows a total of 3,813,096 tons, that is to say, 1,975,709 of arrivals, and 1,837,387 of clearances. The arrivals were made up as follows: ocean navigation, 1,234,462; navigation between the province and the United States, 312,572; coasting trade, 427,665. The clearances show 1,159,759 tons of ocean navigation; 245,309 of navigation between the province and United States, and 432,327 of coasting trade. The number of vessels was as follows:

	Arrivals.	*Clearances.*
Ocean navigation	1,010	1,065
Navigation between the province and the United States	1,748	1,460
Coasting trade	4,246	4,567
Totals	7,004	6,992

The number of men composing the crews is given as follows in the official reports:

	Arrivals.	*Clearances.*
Ocean navigation	19,621	29,496
Navigation between the province and the United States	10,018	7,679
Coasting trade	14,584	14,292
Totals	44,223	51,467

There are three great ocean steamship companies in the province : the Allan Company, the Dominion Company, and the Beaver Line Company. The steamers of these companies run between Quebec and Montreal and the ports of Great Britain, in summer ; in winter, their termini on this side of the Atlantic are Halifax and, in the United States, Portland, Boston and Baltimore.

The official reports do not give the tonnage of the vessels registered in the ports of the province ; but it is well known that it exceeds 200,000 tons ; at $30 a ton, the value of the maritime property belonging to the shippers of the Province would thus amount to $6,000,000.

XXIII

MONETARY INSTITUTIONS.

The paid-up capital and reserves of the banks of the province of Quebec amounted, on the 30th September last, to $46,154,207.30, distributed as follows between the different institutions :

	Paid up Capital.	*Reserve Funds.*
Bank of Montreal	$12,000,000.00	$ 6,000,000.00
" British North America	4,866,666.00	1,174,565.00
" du Peuple	1,200,000.00	300,000.00
" Jacques-Cartier	500,000.00	140,000.00
" Ville Marie	478,430 00	20,000.00
" Hochelaga	710,100.00	100,000.00
Molson's Bank	2,000,000.00	1,000,000.00
Merchants' "	5,799,200.00	1,920,000.00
Nationale "	1,200,000.00	1,000,000.00
Quebec "	2,500,000.00	425,000.00
Union "	1,200,000.00	1,000,000.00
Saint-Jean "	226,870.00	10,000.00
Saint-Hyacinthe Bank	264,670.00	
Eastern Townships Bank	1,468,716.30	450,000.00
	$34,414,642 30	$11,789,565.00

The paid-up capital of the banks of our province forms 57.15 per cent of the paid-up capital of all the banks of Canada, which amounted to $60,210,288 on the 30th September last. At the same date, the discounts were $72,756,670.02 ; the assets of our banks represented $138,860,9 19.64 and their liabilities $91,249,846.01, which indicates a prosperous state of affairs. The deposits formed a total of $60,626,789.10—Government deposits not included—of which $28,034,527.61 were payable on demand and $32,592,261.49 after notice.

Apart from these discount banks, we have two banks of deposit : the Montreal City and District Savings Bank and La Caisse d'Economie Notre Dame at Quebec, rich and powerful institutions, whose condition is most prosperous. On the 31st October last, their paid-up capital was $850,000.00. Their liabilities represented $10,696,495.35, and their assets $11,983,061.76, or an excess of $1,286,566.41 of assets over liabilities. The ordinary deposits, or

those made by private persons, formed a sum of $10,237,015.58. The loans, guaranteed by Government securities. bank shares, and other industrial stock, amounted to $4,534,893.12, and the cash on hand to $2,219,562.47. The investments comprised $2,801,436.03 of municipal debentures or bonds, and $1,501,597.00 of Federal Government bonds.

In addition there are large deposits in the Post Office savings banks, which unfortunately withdraw considerable sums from circulation and trade.

We have also a number of loan and mortgage institutions, notably, the Credit Foncier Franco-Canadien, which nearly all do an excellent business. Lastly, we have also several life, fire and accident insurance companies, so that, as far as monetary institutions are concerned, our province is ahead of nearly all the countries with the same population and especially of all the other provinces of Canada.

XXIV

NAVIGATION AND RAILWAYS.

The St. Lawrence, one of the finest rivers of the world, takes its rise in a small lake in Minnesota, which discharges its waters into Lake Superior by the river St. Louis. It is designated by different names : St. Mary's, between Lake Superior and Lake Huron ; St. Clair or Detroit, between Lake Huron and Lake Erie ; Niagara, between Lake Erie and Lake Ontario ; and lastly, St. Lawrence, from the latter lake to Point des Monts, which is regarded as the line of separation between the river and the gulf. The total length of the St. Lawrence is 2,180 miles. Its ordinary width varies between one and four miles in its upper course, increasing below Quebec to over one hundred miles at its mouth. It is navigable for ocean vessels to Montreal, which is 833 miles from the straits of Belle Isle ; and from Montreal to the head of Lake Superior, a distance of 1398 miles, it can be navigated by vessels of 700 tons with the aid of the canals built to overcome the rapids. The smallest locks of these canals are 270 feet long, 45 wide, with 9 feet of water. By the straits of Makinac, Chicago, 1,145 miles distant from Montreal, can also be reached by navigation by the St. Lawrence route.

Apart from the St. Lawrence, we have 72 miles of ocean navigation on the Saguenay and more than 100 in the Bay des Chaleurs and the river Ristigouche. The river navigation, for steamboats, comprises fifty miles on the St. Lawrence above Montreal, about 200 miles on the Ottawa and its lakes, 60 miles on the Richelieu, 75 miles on the St. Maurice, and about a hundred miles on the other rivers, without counting the lines on Lakes St. John and Memphremagog.

The length of the railways in operation in the province of Quebec was as follows on the 1st December, 1888 :

1. Grand Trunk, including 12.87 miles for the Beauharnois Junction railway ..... 495.87 miles.



2. Canadian Pacific, including the lines of the South Eastern company and the Short Line (the length of this company's system in all Canada is 4,597.93 miles)	833.93	"
3. Intercolonial railway	315.00	"
4. Temiscouata railway	68.72	"
5. Quebec Central railway	154.15	"
6. Massawippi railway	36.75	"
7. Bay des Chaleurs railway	50.00	"
8. Lake St. John railway	191 28	"
9. Quebec, Montmorency and Charlevoix railway	21.50	"
10. St. Lawrence, Lower Laurentides and Saguenay railway	21.50	"
11. Drummond County railway	12.48	"
12. Vermont Central railway, system	77.10	"
13. Canada Atlantic railway	53.00	"
14. Great Eastern railway, including the Montreal and Sorel road	50.79	"
15. Rockland Quarries railway, near Richmond	4.12	"
16. L'Assomption railway	3.50	"
17. Great Northern railway	8.00	"
18. Carillon and Grenville railway	12.75	"
19. Montreal and Lake Maskinongé railway	13.00	"
20. Pontiac and Pacific Junction railway	71.00	"
21. Long Sault and Lake Temiscamingue railway	6.00	"
	2,500.44	"

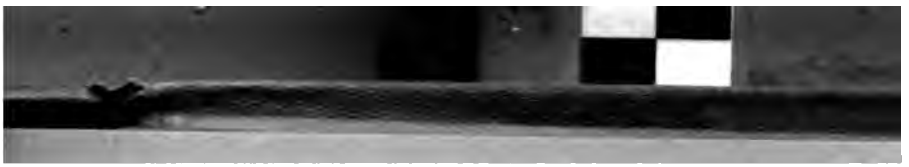
This gives a mile of railway for every 625 inhabitants and every 754 square miles of territory.

Estimating the cost of these railways at an average of $20,000 per mile, including the rolling stock and plant, we get a sum of $50,000,000 or about 250,000,000 francs,

The number of miles of railway actually building is as follows :

1. Quebec and Lake St. John railway	68.00	miles
2. Bay des Chaleurs railway	130.00	"
3. Quebec, Montmorency and Charlevoix railway	68.50	"
4. Hereford branch	34.50	"
5. St. Lawrence, Lower Laurentides and Saguenay railway	38.50	"
6. Quebec Central railway	39.14	"
7. Ottawa and Gatineau Valley railway	62.00	"
8. Long Sault and Lake Temiscamingue railway	11.00	"
9. Pontiac and Pacific Junction railway	16.50	"
10. Great Northern railway	13.00	"
11. Great Eastern railway	24.89	"
12. Drummond County railway	26.52	"
13. Beauharnois Junction railway	0.88	"
Total	533.43	

Since Confederation, the Government of the province of Quebec has expended, in constructing and aiding the construction of railways, a sum of $19,566,834.90. Before Confederation, the Government of United Canada had paid towards the construction of the Grand Trunk $15,142.633, of which the province contributed at least the half or $7,571,316.50. To the 30th June, 1887 the building of the Canadian Pacific Railway had cost the Federal Governmen



$71,641,697. As our province furnishes about a third of the Federal Government's revenues, it has contributed $23,880,560 towards the realization of that enterprise. In the same proportion, it has paid $1,360,435 of the $4,082,307 expended by the Federal Government in grants to railways constructed in our province to the 30th June, 1887. At that date, the Intercolonial had cost $44,995,982, leaving $14,998,660 as the third furnished by the province of Quebec

Grouping all these figures together, we arrive at the conclusion that, within thirty years, the province of Quebec, through its Governments, has laid out about $67,177,807 on railway construction. Few countries have shown more liberality in favor of such undertakings.

XXV

VICTORIA AND LACHINE BRIDGES.

In connection with our railways, the Victoria and Lachine bridges, two monuments of architecture and civil engineering which far exceed all other structures of the same nature in the world, call for special mention.

The Victoria bridge, built on the tubular system, has twenty three arches, each 242 feet long and one in the centre of 330 feet, with an abutment 1,200 feet long on the Montreal side and one of 800 feet on the south side at St. Lambert, which gives a length of 6,600 feet between the abutments, very nearly a mile and a quarter or about two kilometres, and of 9,184 feet, the abutments included, making a total length of a mile and three quarters, about 2·72 kilometres. The tube forming the bridge is 16 feet wide and 19 feet high at the two extremities, but increasing to 22 feet in the centre. This tube is divided into sections, two of which are of 516 feet to counteract the expansion of the iron and rest at each extremity on rollers, which facilitate the expansion and contraction. The plates are consolidated by T angles and bars of iron The tube is supported in 24 pillars of cut stone (Chazy formation limestone) which measure 92 x 22½ feet at the base and 33 x 16 feet at the top. The weight of the blocks of stone composing the masonry ranges from 6 to 17 tons, or from 12,000 to 34,000 lbs per block, and are joined together by iron cramps and bolts, The height of the bridge over the surface of the water is 60 feet. Under the bridge, the current runs at the rate of seven miles an hour and its greatest depth is 22 feet. The painted superficies of the tubes is 30 square acres, and, as they received four coats, the painting represents a total superficies of 120 acres.

The only structure of the same nature, which at all approaches the Victoria bridge, is the Britannia bridge, over the Menai Straits, in Wales. The following table will show the differences between the two :

	Britannia.	*Victoria.*
Length between the abutments	1,513 feet	6,600 feet
Total length, including the abutments	1,841½ "	9,184 "
Number of pillars	2	24
Greatest distance between pillars	460 "	330 "
Height of centre pillar over water	102 "	60 "
Cubic feet of masonry in the whole structure	1,300,000	3,000,000
Weight of iron in tubes	4,825½ tons	8,000 tons
Number of rivets in the tubes	1,000,000	2,000,000

The Victoria bridge cost $6,500,000 or about 32,000,000 francs. It was commenced on the 30th June, 1854, and opened to traffic on the 17th December, 1859. It connects the railways of the north shore of the St. Lawrence with those of its south shore and belongs to the Grand Trunk Railway Company. It spans the river at the foot of the Lachine rapids or Sault St. Louis.

At the head of these rapids, eight miles higher up, is the Lachine bridge, constructed in 1886 and 1887 by the Canadian Pacific Railway Company. This bridge is built on the articulated or truss system. Its length is 3,550 feet and comprises three arches of 80 feet each, 8 arches of 242 feet, 2 of 408 feet, 2 of 270 feet, and one moveable or swing arch of 240 feet. This moveable swing is over the Lachine Canal and is opened and shut by steam machinery of an altogether new kind. The elevation of the bridge is 60 feet over the water, which at this point flows at the rate of 15 miles an hour. In its style, it is the greatest bridge in existence. Its cost is estimated at $3,500,000 or about 17,000,000 francs

XXVI

FINANCES.

The revenues of the Provincial Government are derived from the Federal subsidy, the receipts from our immense public domain, including forests, mines and lands properly so called, licences and certain other direct taxes. As regards the imposition of taxes, the powers of our Local Legislature are unlimited; it can increase the revenue at pleasure, ten, fifteen or twenty times, if it think proper; in this respect, it has no other limits than the will of the people.

From 1887 to 1888, the revenues and expenses of the Local Government have been as follows:

Year.	*Revenues.*	*Expenses*
1868	$ 1,535,836.66	$ 1,183,238.44
1869	1,676,152.08	1,331,011.49
1870	1,663,236.36	1,559,192.98
1871	1,651,287.09	1,759,495.25
1872	1,746,459.54	1,725,685.23
1873	1,999,942.57	1,731,750.78
1874	2,041,174.71	1,937,772.04
1875	6,032,234.45	3,439,256.24
1876	2,340,151.63	3,862,517.38
1377	6,618,444.98	5,926,848.75
1878	2,826,324.19	5,588,862.93
1879	7,591,076.07	7,205,162.00
1880	3,546,637.44	3,945,620.01
1881	7,504,497.85	7,206,725.69
1882	5,263,973.84	5,420,577.77
1883	4,655,759.96	3,909,597.50
1884	5,893,593.08	4,690,214.54
1885	3,604,111.01	4,666,343.23
1886	3,895,037.53	4,125,815.60
1887	3,682,150.67	4,635,102.50
1888	4,634,076.11	5,991,977.70
	$83,401,157,82	$81,547,768.05

The revenues include $21,367,999.73 derived from six consolidated or permanent loans representing a total of $22,354,353.34.

The expenses on capital account comprise $18,387,501.80 for the construction of railways to the 30th June, 1888, $1,291,613.44 for the construction of the Parliament and Departmental Buildings, $638,816.63 for the Quebec Court House, and $138,349.02 for the Jacques Cartier Normal School, Montreal, making in all $2,068,779.09 for these three splendid edifices and $20,456,280.89, as the total of the expenses on capital account, including the amounts paid for railway construction.

Against our consolidated debt, already reduced to the extent of $783,925.11 by our sinking fund service, we have the balance of the price of sale of our provincial railway, $7,000,000, and the indemnity granted by the Federal Government for the construction of that railway, $2,394,000 which already makes $10,777,925.11. We have in addition the balance due us on the final settlement of the old accounts with Ontario and the Federal Government, and valuable city properties, which can be sold with the greatest ease, so that the balance of our debt, deduction made of the realizable assets, does not exceed $10,000,000.

Since Confederation, our principal ordinary expenses have been : legislation, $3,846,190.77 ; civil government, $3,395,682.25 ; administration of justice, $7,645,006.07 ; public instruction, $6,830,845.68 ; arts and manufactures, $153,374.40 ; agriculture, $1,455,809.21 ; colonization, $2,051,126.74 ; immigration, $428,524 ; public works and buildings imputable to ordinary revenue, $2,101,444.52 ; charities, $5,946,389.53, of which $3,816,940.36 for insane asylums ; surveys of public lands, $610,214 ; cadastration, $748,925.51 ; public debt, $10,121,590.14, or in all $49,151,063.48, which leaves a dozen millions for the different other ordinary expenses. The principal ordinary revenues for the same twenty-one years between 1867 and 1888 form the following totals : Federal subsidy, $21,348,322 ; Crown Lands revenue, $12,116,194 ; licenses $4,314,541 ; administration of justice, $4,004,799.91 ; registration stamps, $282,099 ; interest on the price of sale of our provincial railway, $2,121,182.25 ; or upwards of $44,000,000 from these six sources of revenue only.

Within a couple of years, the receipts from lands and licenses have increased over $175,000, and this increase goes on regularly. The proceeds of the taxes on commercial corporations, which yield more than $120,000 annually, swells our revenue by so much, and, with an administration knowing how to prudently take advantage of the elasticity of our revenue and to keep the ordinary expenses strictly within the bounds imposed by the dictates of a wise economy, it is possible to rapidly promote the progress of the province.

XXVII

EDUCATION.

The control and general supervision of matters relating to public instruction are exercised by a Council composed : 1o, *ex officio*, of all the Catholic



bishops of the province; 2o, of as many laymen belonging to that religious denomination appointed by the Government; 3o, of a certain number of Protestants also named by the Government.

This Council of Public Instruction meets very seldom and then only to discuss questions of general interest. The business is practically done by two committees: one called the Catholic committee, composed of the bishops and the Catholic lay members of the Council; the other called the Protestant committee and formed of the Protestants named by the Government and a certain number of associate members chosen by the committee. Each committee sits separately and annually distributes the moneys voted by the Legislature for public instruction.

Our whole school organization is directed by the Superintendent of Public Instruction, who is *ex officio* member and president of the Council, with a deliberative voice in the two committees. He has as executive officers thirty-five inspectors, whose duty it is to visit all the schools subsidized by the Government, to see to the observance of the school laws and to report to the Superintendent upon the state of the schools and of education in their respective districts.

There are Catholic inspectors for the Catholic schools and Protestant inspectors for the Protestant schools. These inspectors are named by the Government on the recommendation of one or other of the committees, according to the religious denomination to which the schools to be visited belong.

School Commissioners.

In each municipality, school affairs are managed by commissioners chosen by the ratepayers. It is the duty of these commissioners to fix and levy the school contributions, to apportion them between the different schools, to engage and pay teachers, to see to the construction and maintenance of school houses and the supervision of the teaching — in fine, to attend to everything relating to school matters in their respective municipalities. On several points, there may be an appeal from their decisions to the Superintendent and Council of Public Instruction.

Dissentient Trustees

In municipalities of mixed creeds, the majority in religion control school affairs; but, if the minority are dissatisfied with the administration of the commissioners, they may name trustees to take exclusive charge of the administration of their school affairs.

In all that concerns the schools of the minority, these trustees have the same powers and duties as the commissioners have with respect to the schools of the majority, with the exception that the lathter collect all the school taxes, subject to the condition of handing over to the trustees the share thereof appertaining to the minority.



Protection of Minorities.

The most absolute respect for all religious beliefs as to education and the greatest harmony between the different elements of the population are assured by this organization, which renders all conflict between them on the subject impossible. Moreover, history is there to prove that never, as regards education or any other matters affecting questions of race and religion, have the French Canadians attempted the slightest encroachment on the rights of the other races or the other religious denominations.

School Taxes.

The imposts livied for the purposes of primary instruction consist of a small tax on real estate, producing a sum equal to the Government grant, and a monthly contribution ranging from five to fifty cents, twenty-five centimes to two francs, for each child of age to attend school, that is to say, from seven to fourteen years old. All the ratepayers are obliged to pay the school taxes, even when they do not send their children to school, and, in this sense, it may be said that, in our province, primary education is compulsory.

Normal Schools.

To form teachers for the primary and secondary schools, we have three special teaching schools designated as normal schools, and maintained exclusively at the cost of the State. One of these schools is Protestant ; the other two are Catholic. These institutions are under the immediate control of the Superintendent of Public Instruction, and the Catholic ones are directed by an ecclesiastic recommended by the Council of Public Instruction and appointed by the Government.

Nature of Education.

Our system of public instruction embraces teaching in all its grades, from university training down to that of the humble primary school. At the head of this system, we have three great universities : Laval University, a French and Catholic institution, and two English and Protestant institutions, McGill University and Bishop's College.

Laval University.

Laval University was founded in 1852 by the Quebec Seminary and organized by the Revd Louis Jacques Casault. Its curriculum comprises all the departments of science and art, including even a course of veterinary medicine. Its museums of natural history and geology and its cabinet of physics are most complete. Its library contains upwards of 60,000 choice volumes, including several *incunabula*, a great many historical papers and the *Bollandist* collection. Its gallery of paintings, the most valuable in America, includes a goodly

number of works of the great masters of the sevent eenth century and other later painters of repute. Its professors number eighty : 19 in theology, 17 in law, 25 in medicine, and 19 in the arts. In 1887, the number of its students was 221 in the theology, 181 in medicine, 104 in law and 60 in arts, or a total of 575.

McGill University.

McGill University, at Montreal, founded in 1827 by a wealthy merchant whose name it bears, counts 49 professors : 8 in th faculty of law, 16 in medicine, 13 in arts and 12 in sciences. During the term of 1886-87 the number of students was 27 in law, 236 in medicine, 231 in ar ts and 57 in the sciences. Several of this University's courses are followed by the pupils of McGill College and of the Normal School bearing the same name, which, to a certain extent, form part of the institution. This university has the advantage of having, among its professors and directors, Sir Willam Dawson, a learned and distinguished geologist, whose reputation has extended even to Europe.

Bishop's College.

Bishop's College, of Lennoxville, is an Anglican university, founded in 1843, by Bishop Mountain, of Quebec. Its curriculum covers law, medicine, arts, sciences and theology. The number of its professors and students was as follows in 1887 : in law, 12 professors and 6 students ; in medicine, 17 professors, and 30 students ; in theology, 2 professors, and 4 students ; in ar ts 5 professors, and 20 students, or a total of 36 professors and 60 students.

Classical Colleges.

There are seventeen Catholic colleges in the province. In fifteen of these establishments, the teaching is performed by 300 professors,—293 ecclesiastics and 7 laymen—and the number of pupils amounted to 3,562, according to the statistics of 1887. These figures do not include the number of the professors and pupils of our older classical colleges, like the Seminaries of Quebec and of St. Sulpice, at Montreal, which are independent institutions and make no report to the Superintendent of Public Instruction.

The Protestants have nine colleges, affilia ted with their universities. In 1887, there were in these colleges 38 professors and 257 pupils

Besides these colleges, the Protestants have nine high schools or lyceums for boys and girls, which, last year, aggregated 76 male and female teachers and 1,481 pupils, about 600 of whom were girls.

Convents.

Catholic higher education for girls is imparted by a large number of convents, which are maintained on a footing that does honor to the province.



Model Schools.

In addition to the institutions of secondary instruction, comprising academies and model schools, we have three schools of agricultur, two schools of applied science, thirteen schools of arts and design and five establishments for the training of the deaf, dumb and blind.

Educational Statistics.

The Report of the Superintendent of Public Instruction for the year 1886-87 sums up as follows the educational statistics for that year :

	Catholic.	*Protestant.*	*Total.*
School municipalities	835	311	1,146
Elementary schools	3,586	998	4,584
Superior "	565	78	643
Applied science schools	1	1	2
Arts and design "	..	..	13
Deaf, dumb and blind	4	1	5
Total	4,156	1,078	5,247
Professors, ecclesiastical or religious	868	8	876
" lay	296	162	458
" of normal schools	28	8	36
" of Laval university and of the Protestant universities an l colleges	80	123	203
" in schools for the deaf, dumb and blind	86	3	89
" in arts and design schools	..	..	35
Total	1,358	304	1,697
Female teachers, religious	1,723	...	1,723
" " lay	3,734	1,112	4,846
Total of the teaching body	6,815	1,416	8,266
Pupils of elementary schools	143,848	30,451	174,309
" " superior "	74,795	6,155	80,950
" " Laval university and the Protestant universities and their affiliated colleges	575	772	1,347
" " normal schools	185	96	281
" " special schools	...	...	1,720
Total of pupils	219,403	37,484	258,607

Religion of the Pupils.

Of the 255,259 pupils, who attended the primary and superior schools under the control of the commissioners and trustees, 221,611 were Catholics or 86-80 per cent. and 33,648 Protestants or 13-20, per cent of the whole, which gives a proportion of 6-5 Catholic pupils to 1 Protestant.



Resources of the Schools.

The receipts of the elementary, model and academic schools, under the control of commissioners and trustees, were as follow :

Annual assessments		$759,949
Special "		74,330
Monthly contributions		189,994
Government grant :		
From the common school fund	$154,608	
" " fund for schools in poor municipalities	5,076	159,684
Total receipts		$1,183,957

The Government grant for public instruction comprises the above sums, together with $78,000 for higher education.

The sums annually paid by the Government for public instruction from 1867 to 1888, inclusively, amount to $6,822,727.54, or an annual average of $324,891.77. During these twenty-one years, $153,374.70 were also paid for schools of art and design,and about $70,000 for agricultural instruction, bringing to upwards of $7,000,000, the total expend ed by the Government during that period, for the purposes of education.

Role of the Clergy.

In speaking of education as regards our province. it is hardly possible to pass over in silence the patriotic and eminently national role played by our classical colleges. In these colleges were educated Bedard, Blanchet, Parant, Papineau, Cherrier, DeLorimier and nearly all the patriots, who distinguished themselves in the memorable events of 1837. Again, at the present day all our most prominent public men are graduates of these classical colleges, founded and maintained almost exclusively by our clergy. It is also among the pupils of these colleges that the liberal professions and even a good part of the commercial body are recruited. In fine, if in our province classical education is more widespread than in all the other provinces of the Confederation, if literature and the fine arts are more advanced among the French Canadians than among the other races, this superiority is due to the Catholic clergy and their classical colleges. Our gratitude should be all the greater because the clergy supply this education almost gratuitously and their liberality places it within the reach of all, even of the poorest. In this respect, there is not another country in the world whose institutions can bear comparison with those of the province of Quebec.

XXVIII

CHARITIES.

These institutions constitute—so to speak—the most characteristic feature of our social organization. Hatched by the breath of faith and charity, the *infant colony* of New France was soon endowed with the benevolent ins titu-



tion which Catholicism had long multiplied in the mother country ; and, even before we had a system of fixed and regular government, we had hospitals and asylums to take care of the sick, the poor and the infirm. These admirable charities have since multiplied and form, so to say, the special characteristic of the French Canadian nationality. Our convents, our monasteries of men and women, our hospitals and asylums offer consolation to all the ills and relief to all the hardships and infirmities, and it may be asserted with truthfulness that the benevolent institutions of the France of Louis XIV have been better preserved here than in the mother country.

Our fellow-countrymen of English origin have also numerous establishments of the same kind, and it may be stated without fear of contradiction that, in the matter of charities, our province is far ahead of all other countries with the same population. Here, the State liberally subsidizes these institutions ; from 1867 to 1888, the Government of Quebec has expended $894,364.00 in grants to hospitals and refuges ; $1,235,085.17 to reformatories and industrials schools for children and $3,816,940.36 to lunatic asylums, making in all $5,946,389.53 or about 15 per cent of the ordinary revenue of the Province. For the year 1886-87, $243,000 were paid to lunatic asylums, $84,452.00 to reformatories, $39,316.00 to hospitals and refuges and $13,200 to deaf and dumb schools, or $379,968.00 in all.

XXIX

RELIGIOUS ORGANIZATION.

There is no country in the world where freedom of worship is as great as in our province. After some years of struggle, England granted us the full exercise of the rights resulting from the articles of the capitulation of Montreal and the treaty of Paris. In our country the Catholic clergy are absolutely independent in all that relates to religious worship, and are controlled on this head only by the authorities of Rome ; the civil power interferes in matters of worship only for the purpose of lending the support and authority of the law, when necessary or useful. Our parochial organization is still governed by the French laws of the seventeenth century, and the changes which those laws have undergone have only tended to still further strengthen the religious authorities.

The same liberty exists in favor of the Protestants and all other religions ; even Judaism is practised without let or hindrance from the civil authorities. Thanks to this organization the best *entente*, as well as the greatest harmony, reign among the adepts of the different beliefs and the leaders of the different religious denominations. Moreover, the French and Catholic majority make it a point to scrupulously respect the religious beliefs of the minority and have never thought of encroaching in the least on the rights of Protestants, from a religious or any other standpoint.

The Catholic church numbers in our province two archbishoprics, those of Quebec and Montreal, and a large part of that of Ottawa, the seat of which

is in Ontario ; six dioceses, those of Three Rivers, St. Hyacinthe, Rimouski, Sherbrooke, Chicoutimi and Nicolet ; and two apostolic prefectures, Pontiac and the north coast of the St. Lawrence. At the head of the hierarchy is His Eminence Cardinal Taschereau, Archbishop of Quebec, who is also the metropolitan of the ecclesiastical province.

There are three Protestant bishops, one of Quebec, who is the metropolitan of the Church of England, and two at Montreal.

We have no State appropriation for religion. From the Catholics, the parish priests receive tithes, and, when these are insufficient, a capitation fixed by the bishop ; in cities, the curés have fees and a certain fixed sum paid out of the products of the sale of pews and other revenues of this nature. The clergy generally employ their surplus revenues in maintaining charitable institutions, colleges and convents, as well as in the education of young people of talent, and thus furnish us with higher classical education at low price, which seems inexplicable to strangers.

XXX

POLITICAL INSTITUTIONS.

The constitution guarantees to us, in its fullest extent, ministerial responsibility, the liberty of the press, and the liberty of the subject.

Here, as in England, the will of the majority of the people regularly expressed through its representatives in the popular branch of the Legislature is the supreme law. The ministers, who compose the Cabinet or Executive Council, can only remain in office and govern, except in so far and so long as they enjoy the confidence of the majority which makes and unmakes Cabinets at pleasure. The role of the Crown or the Sovereign, represented by the Lieutenant-Governor, is absolutely passive, and is exercised regardless of all personal considerations. The Lieutenant Governor acts officially only on the advice of his ministers ; in case he differs in opinion from them, he may change them, but he must choose their successors among the men possessing the confidence of the majority of the Legislative Assembly.

Liberty of the Press.

We enjoy in a supreme degree the liberty of the press, which has no other control but public opinion and the laws on libel. Our newspapers may criticize, censure with impunity the conduct of the governor, ministers, and public men, without exposing themselves to any other penalties than condemnation for libel or defamation of character, by the ordinary law courts, at the suit of the parties interested.

Habeas Corpus.

Individual liberty is guaranteed to us by the *habeas corpus*, which exists *here as in England* and without any restriction, except such as may be imposed

by Parliament. Any person arrested or illegally detained in prison has a right to apply to a judge of the Superior Court, and to obtain his liberation in case of illegal imprisonment. The same privilege exists in favor of all citizens of the province and of aliens detained in a prison, lunatic asylum or other institution of detention, contrary to the law, or whose individual liberty is restrained otherwise than by regular process of law.

As may be seen, the liberty of the subject with us is surrounded by all the protection and all the guarantees desirable.

Legislature.

Our Local Legislature is composed of the Lieutenant-Governor, having, for advisers, a certain number of ministers, who form a Cabinet or Executive Council, of the Legislative Council or upper chamber, composed of twenty-four councillors named by the Government for life, and of a Legislative Assembly composed of sixty-five members, elected by the people of the sixty-five electoral divisions of the province.

The powers of this Legislature are very important. They include the exclusive control of the public lands; civil legislation, that is to say, upon all relating to the rights of property and the relations of citizens to each other; education; the organization of the law-courts; the incorporation or legal creation of commercial, industrial and other companies, including even railway and navigation companies, whose operations do not extend beyond the limits of the province; municipal affairs and legislation concerning matters of religious worship; public works within the province; agriculture; the administration of justice, civil and criminal; the levying of taxes for provincial purposes and the absolute control of the public moneys, which cannot be disposed of except with the exclusive assent of the Legislative Assembly or the representatives of the people, which constitutes ministerial responsibility in the fullest sense of the term.

XXXI

MUNICIPAL ORGANIZATION.

The municipal organization is, so to say, the application of representative government in each parish and township erected municipally.

Each regularly organized civil parish outside of the townships and each township forms, *ipso facto*, a municipal corporation the moment it has a population of 300 inhabitants. The affairs of each municipality are managed by a council composed of seven members elected by the ratepayers, and presided over by one of the councillors chosen by the others and styled the mayor. To be a municipal elector, it is sufficient to possess as proprietor an immoveable of the real value of $50 or, as tenant, a property of the annual value of $20. The powers of the municipal councillors embrace the making and maintenance of roads, public works of a purely local nature, the levying and collection of

muuicipal and school taxes, police matters and the enforcement of certain laws concerning agriculture. In 1886, there were in the province 758 local municipalities, whose revenues amounted to $1,125,231 and expenses to $959,284.

The county municipality covers all the territory of the county and is composed of the mayors of all the local municipalities within that territory. The chairman of each county council is called the warden. This council regulates all questions interesting more than one municipality, decrees the erection of certain territory into municipalities, and decides in appeal certain contestations arising out of affairs of the local municipalities.

The cities and towns are governed by special councils elected by the rate-payers. Their powers are very extended and regulated by special charters or by the general law relating to cities and towns in default of special laws.

XXXII

JUDICIAL ORGANIZATION.

Our judicial machinery comprises courts of commissioners, and magistrates or justices of the peace, courts of district magistrates, police magistrates, recorders in cities, the Circuit Court, Superior Court, Court of Review, Court of Appeal, the Supreme Court of Canada, and, in England, the Privy Council, which is the highest tribunal.

Commissioners' Courts.

The commissioners' court is composed of persons chosen directly from the people and mostly belonging to the agricultural class, appointed from time to time by the Lieutenant Governor in Council, in nearly all the municipalities. Its jurisdiction is limited almost wholly to the recovery of civil debts for amounts not exceeding $25, and its decisions are mostly based on equity, without much regard for the text of the law or jurisprudence.

Justices of the Peace.

The justices of the peace are also named by the Lieutenant-Governor, but mayors of municipalities are justices of the peace *ex officio* during their terms of office. The functions of these magistrates are chiefly confined to police matters and their jurisdiction does not exceed the limits fixed by the general laws. In criminal matters, they have primary jurisdiction, in the sense that they issue the warrants for the arrest of persons charged with crime, conduct the preliminary examinations of the witnesses, discharge the accused when there is no proof against them, or, in the contrary case, commit them to prison to await their trials, which are conducted by the police magistrate or the criminal court properly so called and legally designated as the "Court of Queen's Bench, Crown side."



Magistrates.

The police magistrates have a little more extended jurisdiction than the others and sit as judges of the sessions of the peace.

The district magistrates have in criminal matters the same jurisdiction as the police magistrates in the large cities and, in addition, civil jurisdiction in certain affairs, the importance of which is according to the district.

Recorders.

The recorders in the cities are charged with punishment of infractions of the police laws and municipal regulations, and it is before them that suits for the recovery of municipal taxes are taken and heard. These courts have a good deal of analogy with the tribunals of "*police correctionnelle*" in France.

Circuit Court.

The Circuit Court, presided over by one of the judges of the Superior Court, is held in each judicial district and sometimes in the counties, at stated periods. Its jurisdiction is exclusively civil and does not go beyond cases in which the amount in dispute is less than $200 in some places and less than $100 in the great centres. It has an appellate jurisdiction in certain cases and its judgments are non appealable in actions where the amount in dispute does not exceed $100.

The Superior Court sits at the *chef-lieu* of each of the twenty judicial districts into which the province is divided. Its jurisdiction is exclusively civil, but without limit as to amount. The judges of this court also hold the criminal assizes or terms of the Court of Queen's Bench, in the rural districts, that is to say, in all the judicial districts except those of Quebec and Montreal. An appeal lies from the judgments of the Superior Court to the Court of Review and to the Queen's Bench. The bench of the Superior Court is by law composed of thirty judges distributed through the different districts, and it has for its chief justice, at Quebec, Sir Andrew Stuart, a most distinguished man, and, at Montreal, judge Johnson, a jurist of eminence.

Court of Review.

The Court of Review sits at Quebec and Montreal and is composed of three judges of the Superior Court called from any district by the chief justice review finally the judgments of that court, when these are confirmed. But when these judgments are not confirmed, the decision of the Court of Review is susceptible of appeal to the Court of Queen's Bench.

Court of Queen's Bench.

The Court of Queen's Bench, the highest appeal court of the province, is both a court of appeals for the whole province and a criminal court. It is

composed of six judges, of whom Sir Antoine Aimé Dorion, one of the most notable men of America, is chief-justice. One of its judges presides at the criminal assizes which are held twice a year at Quebec and Montral ; but five of them sit together when the court sits in appeal.

It well be at once seen that judicial decen tralization exists in the highest degree in our province and that the law courts are accessible and within easy reach of all. We have courts of justice in all the parishes, in all the towns, in all the counties, in all the districts and in all the cities. We have also the jury system in all its fullness, even in civil matters. The terms of the criminal courts are fixed by law, so that the accused are sure to have their trials at stated periods, which is an unquestionable guarantee for the liberty of the subject. In order to shorten imprisonments pending the criminal assizes, our law permits, in certain cases, the summary trial of the accused, if he prefers it, before the police or district magistrates.

The judges of the Superior Court and the Queen's Bench are appointed and paid by the Federal Government ; but the organization and constitution of the law courts, their creation, and the civil procedure followed in them belong to the Provincial Government ; this provides a perfect gu arantee for the autonomy of the province, as well as for its French institutions.

XXXIII

CIVIL AND CRIMINAL LAWS.

Our civil law is the French civil law, as it stood before the French revolution, with the addition of some provisions of the Code Napoleon, which have been inserted into ours. With us, the right to will is unlimited ; each citizen is free to dispose of his property by testament as he pleases. Community of property between husbands and wives still exists in our province, where there have been no stipulations to the contrary, together with the continuation of the community after the decease of one of the consorts, which has been abolished in nearly all the countries of Europe.

Our criminal law is the common law of England, as modified from time to time by the laws of the Federal Parliament, which has exclusive powers of legislation as regards criminal matters. These powers are to-day greater than ever, as the right of appeal to England in criminal cases has been abolished. As already stated, the *habeas corpus* forms part of our criminal law.

XXXIV

HYPOTHECARY LAWS.

Our laws concerning the registration of real rights is as perfect as it is possible to imagine. With our system of cadastration and registration, a few instants are enough to ascertain all the charges and encumbrances upon any *immoveable*. The designation of the property can give rise to no mistake, as

it is all described at length in the books of reference and on the plans of the cadastre deposited in each registry office and represented by a number in its order ; it is sufficient to mention this cadastral number in a deed of mortgage and the name of the place in which the property is situated. The capitalist, who lends money on mortgage with a knowledge of all the facts, is perfectly safe, and all the more so because once the cadastre is definitely in force in a locality, the titles of the proprietors appearing therein as such become unassailable and the mortgages which have not been renewed become null and void or only rank after others of later date. In this respect, the province of Quebec offers incontestable guarantees to the investment of foreign capital.

Decentralization.

A French writer has said that " in a democratic society, to limit liberty, we must divide its action by multiplying the centres of local independence, and by reuniting them by hierarchical intermingling. " This is precisely the great characteristic of the institutions of our province. We have judicial decentralization, municipal decentralization, scholastic decentralization, agricultural decentralization, and decentralization in the temporal affairs of the churches, in a word, in all that more closely affects the interests of the people. We know of no country where the people govern themselves more directly and more completely by themselves than in our province.

Here, not a single cent of the people's money can be expended by the political government, the municipal government, the government of the church in temporal matters, by our agricultural societies, or by our school commissioners, without that expenditure being sanctioned by the representatives of the people. Our municipal councils, our boards of school commissioners, our meetings of churchwardens and freeholders, of members of agricultural societies, form so many little parliaments, wherein the representatives of the people discuss and guard the interests of their constituents, and take part in public affairs, which are carried on and decided only with the assent of the parties interested. Thanks to this decentralization, the special interests of race and religion enjoy complete protection ; the citizens of different origins and religious beliefs have no cause of dissension, or conflict, and live in the most perfect harmony ; they esteem each other as the inhabitants of a country should where Christian sentiment is respected and the religious idea deeply rooted ; in fine as in countries where true civilization is the most advanced. The liberties, which we have conquered with the blood of some of our members, enable us to retain under the British flag the customs, language, and civil laws of the France of Louis-the-Great, to openly proclaim ourselves French, without hindrance or molestation, to take a prominent part in the politics and destinies of the Candian Confederatioan, and our fellow citizens of English origin benefit too much by these liberties to think badly of us for having introduced them into the country—we, the descendants of the autocratic France of Richelieu and Louis *XIV*.

THE FUTURE.

Incomplete as this sketch may be, it shows clearly the brilliant future in store for our province and the French race, a race that constitutes more than three quarters of the population. The extent and richness of our territory; its natural resources, as inexhaustible as they are varied; its incomparable geographical position, which enables it to command the trade of the richest portions of Canada and the Western States of the American Republic; its great waterway of the St. Lawrence, the most important channel of inland and oceanic and navigation which exists in the world; its magnificent system of railways, which is rapidly extending; its universities, colleges, convents, and its thousands of public schools, which furnish the people with education and instruction in all branches and degrees; its numerous benevolent institutions, for the relief of distress and infirmity; its political institutions which guarantee freedom to all citizens, and the most absolute protection to all races and religious interests; the perfect harmony which reigns among the different groups of its population,—in fine the result of all these benefits and advantages will be that, in the near future, our province will offer the spectacle of a great people, rich, happy and prosperous, and as all these things will be achieved in a large measure by that French-Canadian population, whom Providence seems to have selected as the special instrument of its inscrutable designs, the future writer of the history of this beautiful country may, with reason, take for epigraph for his book :

Gesta Dei per Francos.

HONORE MERCIER



CANADIAN ASBESTOS.

By Robert T. Hopper.

About eleven years ago discoveries of this mineral were made in Canada, and the attention of American capitalists drawn to it, and about the same time the writer took samples of the product to England and brought them before some of the English manufacturers who then having experience only with the Italian product, and being interested in mines in Italy, were inclined to disparage the value of the Canadian article.

The mining of Asbestos in this country was first regularly commenced in the year 1879, when an output of from 200 to 300 tons was produced and has steadily increased from year to year, last year's output reaching about 5,000 tons, almost the whole of which was extracted from the mines at Thetford and Black Lake, Que.

Asbestos and its uses is claimed by some to have been one of the lost arts, its fire resisting qualities having been known to the ancients who wove it into cloth, etc., in which they wrapped their dead previous to cremation and in which the ashes from the body were saved, but its use in modern times dates back less than a quarter century, when it was discovered in Italy. The description of fibre found in that country is of a much longer and coarser fibre than the Canadian, suitable only for a limited number of uses and not adaptable to the finer and more general uses to which the Canadian product can be applied.

As evidence of this fact Canadian Asbestos has now almost entirely superceded the Italian, and is being shipped to and manufactured in England, Scotland, France, Austria, Spain, Germany and the United States and even Italy as well, which is equal to sending coals to Newcastle.

A great deal of both time and money has been spent in perfecting new and special machinery to successfully manipulate the fibre, and new ideas and uses are constantly being discovered.

The fibrous nature and fire proof qualities of Asbestos gives it a peculiar advantage over all other known materials for use in the line of fireproofing materials, such as building felts, fire proof paints, non conducting coverings for steam boilers and pipes, steam packings, linings for railway cars, theatre curtains, &c., &c., and wherever heat resisting qualities are required.

Every month seems to bring forth some new application of asbestos fibre to the purposes of commerce and manufacture. Tests have recently been made in London and Paris for its use as a fire proof clothing for fire brigades, and the wearers were able to walk amidst flames with impunity. Asbestos is now being largely used as

a medium for exhibiting and retaining heat in gas and coal oil parlor heating stoves ; it is used to make axle-guards for railway cars to replace the wooden rings hitherto used to prevent waste in the packing of the car-wheel boxes, the asbestos guard being much better than the wooden rings in that it prevents fire starting in the boxes. Asbestos is used for the manufacture of cases and boxes for carrying valuable goods or documents, and will no doubt soon be turned to valuable use in the construction of fire proof vaults, etc. Its inestimable value as a material for curtains, screens, etc., in places liable to fire—, such as theatres, halls, colleges, etc.—is now placed beyond question. Already forty theatres in the United States have adopted it for drop curtains and side entrance screens as the material is not only perfectly fire proof but lends itself to any species of painting or decoration which can be applied to canvas, and has the additional advantage of being unaffected by acids, chemicals or mineral oils. The same remarks apply to fireside rugs which are now woven of asbestos in the grey and afterwards painted or decorated ; such fabrics cannot be charred unless subjected for a considerable time to a heat of 3,500°, a temperature that cannot be produced except by artificial means. Asbestos washers are used as superior to rubber ones ; the fibre will effectually close the breeches of big guns to prevent the passage of gas, and is used in the same way in miner's lamps. It has also a new and important use in the manufacture of torpedoes, and as washers for time-fuzes ; while it is now being applied as a coating between the armor plates of war vessels. Still another military use is the construction of balloons of asbestos cloth to be inflated by heated air instead of gas, successful experiments being made last year by the Royal Engineers at Chatham. In building operations as a material for fire proof floorings, partitions, etc., its value is being fully appreciated. Asbestos is made into gloves for electric light work, straining cloths for sugar refineries, chemical laboratories, linings for boot-soles (which have the double advantage of a preserver of heat and a protector from cold), linings for cold storage chambers, indestructible writing paper, ropes for fire escapes, lubricants, filters, deodorizers for cesspools, etc., in nearly all of which services it is superior to any other material.

It will therefore be seen at a glance what an extended field there is for its consumption in that line alone, not to speak of many other uses to which it is suited and to which it will no doubt be applied in course of time.

Canada is rapidly being recognized as rich in minerals, amongst which her Asbestos deposits are such as promises a large development in the future.



Section VI.

ONTARIO.

MAP OF THE PROVINCE.

ONTARIO AS A HOME.

MISCELLANEOUS NOTES.

EDUCATIONAL SYSTEM OF ONTARIO.


Collegiate Institute
1886
Ontario Public School. 1886
Ontario Public School. 1847



ONTARIO

AS A HOME FOR THE

BRITISH TENANT FARMER

WHO DESIRES TO BECOME

HIS OWN LANDLORD.

ISSUED BY AUTHORITY OF THE GOVERNMENT OF ONTARIO.

HON. CHARLES DRURY, M. P. P.,
Commissioner of Immigration.

DAVID SPENCE,
Secretary, Immigration Department.

TORONTO:
PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST.
1888.





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INTRODUCTION.

Emigration continues to engage a large share of public attention. The philanthropist and the statesman regard it as an important factor in their schemes for the well-being of the people. The man of energy recognises in it the opening of new and wider fields for enterprise, and to anyone who aspires to the possession of an independent home, whether as the reward of industry or at the cost of a moderate outlay of capital, it affords an opportunity for the gratification of his ambition. For generations there has been an unceasing annual outflow of population from the British Isles, and those who were left behind have thereby enjoyed freer scope for the pursuit of material comfort and social progress, for by mitigating the pressure of the ever-swelling numbers who are crowding each other in the battle of life, it has moderated the keenness of home competition. And the emigrants have, by their industry and enterprise, built up new communities rivalling the old in every element that constitutes a nation's greatness and contributes to the happiness of its inhabitants. The rapid growth of these new communities is the most remarkable feature in the history of the present century. A comparison of the record of the British Colonies with that of any European country, not excepting Britain, will show a progress that equals, if it does not exceed, the ratio of fifty to one in favour of the Colonies in all that goes to make up the material well-being of the population. And what is true of the Colonies as a whole is true in a measure of the individuals who have made them.

Take the Province of Ontario, in the Dominion of Canada, as a sample. There, substantial wealth, or a reasonable competency, is within the reach of every industrious man whose efforts are intelligently directed. The penniless pioneer of a few years ago is the substantial, independent farmer of to-day. The uplifting of the people in social and material comfort is a process as visibly going on from year to year as the revolution of the seasons. Its progress is recorded in the annual advance in the value of accumulated property, in the increase of trade, in the establishment and development of religious, educational and benevolent institutions, in the spread of social refinement, in the cultivation of the sciences, in the appliance of every art that ministers to the happiness of

human life. Nor are these conditions the result of long and painful evolution, taking generations for their development. The young man, with no capital, if possessing only an average knowledge of agricultural labour, and devoting himself earnestly to work, may, with the exercise of reasonable economy, realize a competence by the time he has reached middle life; and the man who is a practical farmer, and the possessor of means sufficient to stock an average English farm, can at once begin life in Ontario as his own landlord, with every assurance of a prosperous career before him.

The present condition of agricultural industry in the British Isles offers no such encouraging prospects either to the labourer, or the farmer with limited capital. Where the cultivable area is so small, and the population so dense, the most liberal land laws cannot counteract the lowering influences of competition, and against these influences only the few can hope to rise above the average level, which will always be below the normal condition of the same class in a country wherein land is plentiful, and its ownership of easy acquisition. In the Province of Ontario, the farm labourer can, in a few years, gather means enough to rent a farm; in a few years more, by well-directed industry, he will, under ordinary circumstances, be in a position to buy one for himself. The farmer with moderate means, can begin at once as his own landlord; or, if he prefers (which is not a bad plan) to acquire a little experience and personal knowledge of the country, he can rent for a short term, until he has had time to make up his mind as to the locality in which he would like to "settle down."

It is because of these opportunities that Ontario is an exceptionally attractive field. It offers all the advantages of the New World, combined with the least sense of deprivation of the comforts of the Old, and to the emigrant from Great Britain or Ireland the most congenial and homelike surroundings. The following pages are intended to show, in a plain way, the facilities it affords to the British agriculturist to establish himself in comfort and independence.


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THE PROVINCE OF ONTARIO.

EXTENT AND GEOGRAPHICAL POSITION.

Ontario embraces an area of nearly two hundred thousand square miles, about eighty thousand more than the United Kingdom. It extends from east to west nearly eleven hundred miles, and from north to south seven hundred miles. Its southern border, Essex County, on the shores of Lake Erie, is traversed by the 42nd parallel, and its northern, at James Bay (forming the southern extremity of Hudson's Bay) by the 52nd, so that it lies within the same degrees of latitude as Michigan, New York, and the New England States, as well as the greater portion of the most fertile countries in Europe. The International boundary line, dividing Canada from the United States, which runs through the River St. Lawrence and the great chain of lakes, Ontario, Erie, Huron and Superior, forms the southern and southwestern boundary of the Province ; on the west lies the Province of Manitoba ; on the north the District of Keewatin and James' Bay, and northeasterly the Ottawa River divides it from Quebec, the latter Province forming the eastern boundary.

It is bountifully supplied with water throughout its whole extent ; patches of swamp land are numerous in nearly every district, but they are usually of small dimensions, and the "cedar swamp," though little fitted for the purposes of agriculture, is exceedingly valuable to a neighbourhood on account of the durability of its timber, and its special adaptability for the making of shingles, posts, fence-rails, paving-blocks, etc., etc. But nowhere is there an arid district, or one in which an abundant water-supply cannot be readily procured, both for man and beast. Besides innumerable lakes, rivers, creeks and streamlets, springs abound in many localities, and everywhere under the soil pure, wholesome water can be "struck" at distances varying from fourteen to forty feet, so that sinking a well, which is frequently a necessity for an isolated household, is very seldom attended with much trouble or great expense.

NATURAL WEALTH.

Redeemed, as the cultivated portion of the Province has been, from the primeval forest, it is needless to say that its vast wealth of timber is still one of its most valuable heritages, capable of furnishing an abundant

supply, both for home consumption and for every probable demand that commerce can make upon it, for centuries to come. Though much has been added, of late years, to the general knowledge of the subject, the great region which is considered to be the main depository of nature's most liberal gifts in mineral wealth is as yet almost unexplored, and only known as to its general external features. But enough is already established to show that the Lake Superior district is enormously rich in iron, silver, copper and other minerals, and now that the Canadian Pacific Railway is running through that country an early development of the mining industry is sure to follow. In the Ottawa region, in addition to the metals already mentioned, there have been considerable finds of gold, while the quarrying of plaster of paris, or gypsum, and marble of excellent quality, are both profitable industries. In the southern district, near Lake Huron, are the famous oil springs, from which petroleum is obtained in immense quantities. Since the discovery of oil in the County of Lambton in 1860, the petroleum industry has developed into great proportions, leading to the rise of towns and villages, and supporting a population of about 10,000. Further to the north are prolific salt wells, which send forth an abundant supply of brine, the salt obtained from which forms a large item in the commerce of that section of the Province. The salt district occupies an area of about twelve hundred square miles, embracing almost the whole of the County of Huron and considerable portions of Bruce and Lambton. Near the lake coast there are no fewer than six successive beds of salt, separated by thin layers of rock, and having an aggregate thickness of over 120 feet. A diamond drill boring, made at Goderich, to a depth of 1,517 feet, went through six beds—the first at 1,028 feet and the last at 1,385 feet—having an aggregate thickness of 126 feet. The harbours of Goderich and Kincardine, on Lake Huron, afford excellent shipping facilities, and all the wells have convenient railway accommodation. Wells of natural gas have been struck in various localities between the St. Clair River and Collingwood on the Georgian Bay. There are also considerable areas of peat beds in several parts of the Province ; the rivers and lakes are well supplied with fish and the forests with game. But the great and abounding element of Ontario's natural wealth is in its soil, and to it and its products it is desired to direct the attention of intending emigrants.

THE ORGANIZED AND UNORGANIZED PARTS OF THE PROVINCE.

Before speaking of the agricultural capabilities of Ontario it seems proper to make a brief reference to its government and institutions, so



that the emigrant may form some idea how much, or rather how little, of old world manners and ways that are desirable to preserve, he will have to part with should he make Ontario his future home. This Province is the most populous and wealthy in the Dominion. Though the newest of all the old Provinces, it has made much more rapid progress than any of the others. Its settlements, extending first along the banks of the St. Lawrence and Ottawa Rivers and the shores of the great lakes, have been gradually pushing backward towards the north and west, so that now as far north as (and including) the County of Renfrew on the east and the County of Bruce on the west—from the Ottawa River to Lake Huron on a line about midway between the 45th and 46th parallel—forms one solid and compact settlement, with Lake Erie, the Niagara River, Lake Ontario and the River St. Lawrence for its southern boundary. In this are included the whole of the forty-two counties comprising what may be termed the completely and permanently organized portion of the Province, within which almost all the acquired wealth and nearly the entire population are concentrated, and in which there is neither a barren spot nor a single township that is not partially occupied. This, though a small part of the territory embraced within the geographical boundaries of the Province (as the reader will perceive by examining the accompanying map) is really what is ordinarily spoken of as "Ontario;" but though the county divisions have not yet been pushed further north and west into Muskoka, Parry Sound, Nipissing, Algoma, Thunder Bay and Rainy River Districts, (called the unorganized parts of the Province, because county divisions are not yet established) into which the main part (geographically speaking) of the Province is divided, still the judicial, educational and municipal institutions are carried along with the advance of settlement into these districts, and the inhabitants have also their representatives in the Dominion Parliament and Provincial Legislative Assembly, so that the general institutions of the Province are established in them as in the older localities, in so far as they are fitted for their introduction. At the last census, taken in April, 1881, the population of the Province was 1,923,228, and is at present estimated at about two millions and a half.



PROVINCIAL AND MUNICIPAL SYSTEMS OF GOVERNMENT.

PROVINCIAL GOVERNMENT.

The Provincial Government has exclusive jurisdiction in questions relating to property and civil rights, education, municipal government, and all other matters of local concern, as distinguished from those of a general character which are under the control of the Dominion or Federal Government at Ottawa. It comprises an Executive, and a Legislative Assembly, forming together what is called the Legislature (or Parliament) for the making, amending or repealing of the laws, having the same powers over the matters assigned to it, and conducting its business with the same forms and under similar rules as the Parliament of Canada, or the Imperial Parliament. The Lieutenant-Governor (representing the Queen, in whose name he sanctions the Bills passed by the Legislative Assembly) is advised by an Executive Council composed of seven members, who form the Cabinet and preside over the seven departments, into which the Administration is divided, viz. : Law ; Finance ; Agriculture ; Education ; Public Works ; Crown Lands, and Provincial Secretary. The Ministers hold seats in the Legislative Assembly and administer affairs so long only as they retain the confidence of the people's representatives, precisely after the manner, and following the very forms of British parliamentary government ; but altogether unfettered by any hereditary branch as in Great Britain, or by a nominated Senate as in the Dominion. The Legislative Assembly holds annual sessions and is re-elected every four years (unless sooner dissolved) under a manhood suffrage law giving a vote to every man above the age of twenty-one years, who is a British subject by birth or naturalization, and is not a pauper, nor undergoing sentence for crime.

THE JUDICIAL AND MUNICIPAL SYSTEMS.

The organized portion of the Province (already described) is divided into forty-two counties and these into townships (answering to English or Scotch "parishes," and usually about ten or twelve miles square). The counties have their Judges, Registrars (of Deeds), Sheriffs and County Councils. The County Judge also holds Division (*i.e.*, Small Debt) Courts, in the several Divisions into which his county is divided, several times during the year, and a semi-annual Court of Assize is held at the



County Town, so that law and justice in all matters of business or of contention, whether civil or criminal, are brought to the very doors of the people. The County Councils are composed of one or more representatives from each township, town or incorporated village within the geographical limits of the county, and administer all municipal affairs in accordance with the municipal laws of the Province. The townships have also their Councils, whoes duty it is to administer local municipal matters, and one or more of whose members represent the township in the County Council. The cities, of which there are eleven, and the towns and villages, of which there are upwards of 200, and the number increasing every year, have also their Municipal Councils, the whole system of municipal government being thoroughly understood and carried out to its fullest extent among the people, nearly all of whom take an active interest in public questions of a local character. The municipal elections are held annually on the first Monday in January, and the electors are composed of the ratepayers, whose names appear on the assessment roll of the previous year.

POWERS OF MUNICIPAL COUNCILS.

The powers and duties of Municipal Councils are defined and regulated by Act of the Legislature, and embrace nearly the whole field of the local administration of public affairs. The levying and collection of taxes for the support of education and the maintenance of public works, including the making and repairing of streets, roads and bridges within the municipality; the preservation of order, the protection of person and property and the carrying out of sanitary and other regulations for the general well-being of the community; the borrowing of money for public undertakings; the supplying of gas, water, etc., are among the principal matters with which the Municipal Councils have to deal within their respective jurisdictions. Township Councils may make and enforce by-laws for the drainage of marsh lands, and for this purpose money is loaned by the Province at a low rate of interest, and repayment is made by a special annual tax levied on the lands thereby benefited. County Councils have jurisdiction in matters common to the whole group of townships, villages and towns embraced within the limits of the County, comprising court houses, gaols and other public buildings, highways, etc., etc. The Local Boards of School Trustees, elected by the people, relieve the municipal councils of the duties incident to the management of the public schools; and the License Commissioners, appointed by the Government, for the several license districts, which correspond nearly with the parliamentary ridings



throughout the Province, control the issuing of hotel, tavern and shop licenses for the sale of liquors, subject to the Provincial laws in that behalf, and the municipal by-laws made thereunder. The clerks of the several municipalities keep the records of births, marriages and deaths, annual returns of which are made to the government. The returns of the annual assessment or valuation of property made by the assessors (who are appointed by the Councils) furnish the basis upon which the rate of taxation is imposed for the various services of the year. From these returns are also made up the voters' lists, the lists of jurors to serve in the courts, etc. The municipalities have power to establish Houses of Refuge for the destitute and to grant relief in individual cases of distress; but Poor Law Guardians and Poor Rates are things unknown in the Province. In the towns and cities charitable institutions of various kinds, sustained mainly by voluntary effort and systematically aided by a small annual grant from the Provincial Exchequer, proportioned to the number of inmates, with a donation more or less liberal from the local municipal funds, amply meet the requirements of public charity, so that the rate-supported "Work-House" has no counterpart among the institutions of Ontario.

EDUCATIONAL INSTITUTIONS, ETC.

The educational institutions of Ontario are such as to place it in the very front rank among the nations of the earth. Not to speak of its higher institutions of learning—its Universities, Colleges and Academies for male and female pupils—it has a Public School system which provides ample means for giving a good common education to all throughout the length and breadth of the land. From the free public school the pupil may graduate to the High School or Collegiate Institute, where he will get an education to qualify him for his University Matriculation Examination. The University of Toronto, a liberally endowed and well-appointed institution as now constituted, is in fact the complement and completion of the Ontario Educational System, with which are affiliated many of the Ecclesiastical or Denominational Colleges of the Province, while it is purely non-sectarian.

PUBLIC AND SEPARATE SCHOOLS.

The Educational System is administered as a Department of the Government with a member of the Executive Council at its head, and the general management, like that of the Municipal System, is in the hands of the people, through Local Boards of School Trustees elected by the

ratepayers. In the rural districts the townships are divided into school sections of convenient size, so that the pupils within the section may be able to attend the school which generally occupies a central position. By this arrangement, and by the additional aid given to "poor sections" in sparsely settled districts, the conveniences of educating the young are carried into the woods with the progress of settlement. The schools are free to the pupils, and attendance either at the public school, or at some private or other school is compulsory between the ages of seven and thirteen years, but the enforcement of the compulsory clause is entirely optional with the authorities in each locality.

The expenditure on education is not stinted, however, as in 1886 it amounted to $3,457,699, while the receipts for the same year were $3,993,483. This money is derived partly from local rates of assessment levied on property, partly from lands originally set apart as Clergy Reserves or for school purposes, and partly from an annual grant from the Legislature. Since 1876 there has been an increase of $477,641 in the revenue from municipal assessments. The average cost per pupil at the public schools for 1887, was $7.09.

Separate schools may be established by Roman Catholics in any section or union of sections, and thereupon they receive their own taxes and a proportion of the annual Government grant for the support of such separate school and are released from supporting the public school. Protestants have the like privilege of establishing Protestant separate schools in sections where the teacher of the public school is a Roman Catholic. By these arrangements sectarian strife or wrangling over "mixed" schools is entirely avoided, and both Protestants and Catholics are satisfied. The school law also permits the establishment of separate schools for coloured people, with the same powers and privileges as apply in respect of other separate schools.

The number of persons of school age, that is between five and twenty-one years, in 1886, was 601,204; the total number of pupils of all ages attending school was 487,496; the total number of teachers was 7,364, and the total number of schools 5,437. These figures include the statistics of the separate schools for Roman Catholics, of which there were 224 in operation in 1886.

MODEL SCHOOLS, ETC.

Another important branch of the system is that of the Model Schools for the training of teachers. They were introduced in 1876, and have

since proved most advantageous to the educational progress of the Province, by supplying a class of competently-trained teachers. These schools are distributed throughout the Province to the number of fifty-five, in which, last year (1887), the total number of student-teachers was 1,491. Of a higher grade than these are the Training Institutes, authorized in 1885, for the training of Assistant-Masters in High Schools and First-Class Public School Teachers; and besides these there are several Normal Schools and Collegiate Institutes, all engaged in preparing the youth of both sexes either for a University course, or for the teaching profession, or for any other walk in life they may choose to follow. No other country offers greater, and very few more economical, facilities for obtaining a thorough education; and this is a consideration which should have great weight with emigrants in deciding where they may cast their lot.

AGRICULTURAL COLLEGE.

The institution known as the Ontario Agricultural College and Experimental Farm, situated about a mile and a quarter from the city of Guelph, forty-nine miles from Toronto, in the midst of a fine farming district, is under the control of the Minister of Agriculture (who is also Commissioner of Immigration and a member of the Executive Council) and was established by the Provincial Legislature, in 1874, for the purpose of giving a thorough knowledge of the theory and practice of farming in all its branches. The main College building is a large and commodious structure, containing students' dormitories, dining-hall, class-rooms, reading-room, library, museum, botanical laboratory, bath-rooms, etc.; and near this building is a fine Chemical Laboratory, thoroughly equipped for the most advanced work in agricultural chemistry. The farm consists of 550 acres, over 100 of which are still under the original forest. Of the cleared portion, about 380 acres are worked as an ordinary farm, 35 acres devoted to experimental work, and 35 to lawn, garden, etc. The live stock comprises nine breeds of cattle, six breeds of sheep, several breeds of swine, and a good representation of horses. Every appliance is provided that will aid in imparting a thorough and practical knowledge of agriculture, more especially of those branches which are best adapted for profitable prosecution in the Province, according to conditions of climate and soil. The institution is under the management of a President, with an able staff of Professors, Masters, Instructors and Foremen, all specially qualified for their several departments. The class-room work



includes a full and practical course of instruction in (1) Agriculture, Live-stock, and Dairying; (2) Veterinary Science—the structure, diseases, and treatment of farm animals, etc.; (3) Chemistry, Geology, Botany, Zoology, and the study of insects as to the best means of preventing their ravages; (4) English Grammar, Composition, Literature, and Political Economy; (5) Arithmetic, Mensuration, Mechanics, Levelling, and Book-keeping. The students are also required to spend a portion of their time at manual labour, for which purpose they are sent in rotation to the farm, garden, live-stock, carpenter shop, and experimental department, and are paid for this work at rates varying from four to ten cents per hour. Most of the students reside in the College and are required to pay for board and lodging at the rate of two dollars and a-half per week. The fees for tuition are equally moderate, being for residents who are the sons of farmers, or who have served an apprenticeship of one year on a farm, $20 a year; for residents who are not farmers' sons, and have not served an apprenticeship on a farm, $30 a year; for non-residents who have served an apprenticeship on a Canadian farm, $50 a year; and for non-residents who have not served an apprenticeship, $100 for the first, and $50 for the second year. It will be observed that the scale of fees is graduated in favour of the people of the Province.

This institution has conferred great benefit on the agriculturists of the Province, by the importation of thoroughbred stock from Great Britain, and by holding periodical sales as the animals multiply on the farm. In order that farmers in all parts of the Province may share equally in the advantages of this arrangement, the animals bought at the sale are delivered at the purchaser's residence free of expense. It must be obvious that such an institution is calculated to aid very materially in the development of every branch of agricultural industry. Professor Sheldon, an eminent English authority, says of it:—"It is a flourishing, though quite a young institution, and its influence is being felt on the agriculture of the Province. The students receive an agricultural education in which science is happily blended with practice, and theory is borne out by demonstration."

FARMERS' INSTITUTES, ETC.

In connection with the College, a series of meetings is held throughout the different counties at stated periods, called "Farmers' Institutes," at which the farmers of the county or neighbourhood assemble to exchange experiences and discuss improved methods of prosecuting their calling.

These meetings are attended by one or more of the professors of the College, or by other competent lecturers, who give instructions suitable to the season, and with the view of improving the methods pursued in that particular locality. Butter making, cheese making, sheep farming, the rearing of young cattle, etc., etc., as well as the varieties of manure, the management of the soil, and kindred subjects, form the ordinary topics of discussion at these "Institutes," and much good has already been effected by them.

The Provincial, the County, and the Township Agricultural Societies, sustained partly by the Government and partly by voluntary contributions, through the agency of their annual exhibitions stimulate progress by healthful competition and a liberal distribution of prizes; and the Bureau of Statistics, established by the Government, for the collection and monthly publication of crop reports, and the official collection and dissemination of statistics, and other information bearing on the condition and progress of agriculture and other industries, furnishes another and quite a valuable aid to the farmer, in making his calculations as to crops and markets.

A further instance of the watchful interest which the Government takes in the farmer's prosperity, and of its willingness to help him forward, is the aid afforded for the establishment of a Model Creamery in the Province, so that butter making, which is already becoming an important branch of the farmer's business, may be rendered still more profitable. It also makes an allowance from the public chest to assist the farmers in planting shade trees on the highways adjoining their farms, where the local municipalities undertake the superintendence of the work. In so far as legislation can be made to encourage the farmer in carrying enterprises to profitable results, he can have no possible reason of complaint against the Ontario Legislature, but, on the contrary, many good reasons for thankfulness that his interests have been so well considered, and this perhaps may safely be said to have resulted from the large measure of influence which he enjoys in the direction of public affairs.

CHURCHES, NATIONAL SOCIETIES, ETC.

Ontario is most liberally supplied with churches. The principal denominations of Christians rank as to numbers in the following order, as given in the census of 1881: Methodists, (the several bodies of Methodists are now united in one as the "Methodist Church of Canada,") 591,503; Presbyterians, 417,749; Church of England, 366,569; Roman Catholics,



320,839; Baptists, 106,680. All denominations stand on the same footing before the law, there being no State Church, nor church rates, nor tithes. They are all supported on the voluntary principle, and while apparently having an abundant supply of funds for their own proper purposes, they contribute liberally to charitable and missionary enterprises, both within and without the Dominion of Canada. The feeling prevailing among the several bodies towards each other is one of friendly sympathy and rivalry in doing good, and religious distinctions are entirely excluded from consideration in the combinations which form the two great political parties of Liberals and Conservatives.

National and benevolent societies, temperance societies in connection with, or independent of, the churches, literary and musical societies, and social clubs, are plentiful in the cities and towns, and there are numerous ways of maintaining social intercourse in the rural districts. Upon the whole, the British emigrant who settles down in Ontario, will find that social life there is very much like what it is "at home" among the well-to-do people, both in town and country—except that in Ontario the freedom of intercourse may strike him as being somewhat less restrained. He will mingle with people of the same stock as himself, but he will find a more intimate and friendly admixture of English, Scotch and Irish than he is likely to have been accustomed to before. He will have transferred himself from the land where the three nations make one kingdom, to the land where the children of the three nations make one people; but in this change, either in its social or its political aspects, he will find nothing that should wound his susceptibilities; but rather let it be hoped, the freer development of the most estimable qualities in each harmonizing in the formation of a new national character, alike honourable to the people of Canada, and to the countries from which they have sprung.

CLIMATE.—FARM WORK OF THE DIFFERENT SEASONS.

The climate of Ontario varies according to latitude, elevation and situation with reference to the great lakes, but is, upon the whole, one of the most pleasant and healthful in the world. The extremes of heat and cold are far greater than in Great Britain, but the purity and dryness of the atmosphere render the hottest days in summer, as well as the coldest in winter, endurable without discomfort. Fogs are rarely seen, except in the mornings of spring and autumn, and though the rainfall averages

about the same as that of Great Britain, one year with another, yet the "rainy days" are much fewer in number, and more certain in their seasons of recurrence. The old description of Canadian seasons—"six months of winter and six months of summer"—is not true of any Province in the Dominion, though it may be approximately correct as to some localities in the north-eastern and north-western territories. But as to Ontario it has no application whatever.

In the southern region, bordering on the lower lakes (Erie and Ontario) the winter usually begins about Christmas and lasts until the latter part of March. Further to the north it begins a little earlier, say about the the middle of December, and breaks up during the first or second week in April. Except in the northern region there is no winter in Ontario lasting over four months, and its average duration in the settled portion of the Province (previously described) is from three months in the southern and western to three and a-half or at the most four months in the eastern and northern districts. The winter storms are comparatively rare—such violent hurricanes, cyclones, or "blizzards" as occassionally visit the western States of the American Union, carrying death and destruction before them, are altogether unknown—and the public highway and railway traffic is never "blocked," or interrupted, more than a few hours at a time, even in the stormiest weather. Though in the northern parts of the Province the winter begins earlier and breaks up later than in the southern, yet so far as settlement has yet advanced to the west and north the seasons have offered no bar to the successful prosecution of agriculture.

April ushers in the spring which comes with great rapidity, the luxuriant vegetation being a perennial source of wonder and admiration even to those who have witnessed it for twenty or thirty years, but whose memories recur to the slower growth with which they were made familiar in the country where they spent their youth. For the practical purposes of the farm the spring is a "short" season and a busy one. The genial rains which fall liberally in April and May, and the increasing warmth of air and soil push forward vegetation with great vigor, and in a few weeks the summer time and the harvest are hurried on together.

The summer season is usually reckoned from the middle or end of May to the middle of September. Under the steady warmth and refreshed by occasional brief but copious showers, the crops make rapid progress, and the month of June is hardly finished ere the hum of preparation for the harvest is heard. Hay-cutting begins about the end of June, and the



wheat harvest in the first week of July, in the most southern parts of the Province. In other localities both operations begin a week or two later according to situation. All the other grain crops follow in rapid succession, so that before the end of August the harvest is completed throughout the Province. The harvest time is usually the period of extreme summer heat, yet those who work in the open field, under the rays of the sun in the middle of the hottest days, seldom suffer injury or even serious discomfort if they use ordinary precautions for their protection.

The autumn season, called the "Fall," is the most deliciously-enjoyable weather of the whole year to those who do not give the preference to the crisp air, the keen frost and the music of the sleigh-bells in winter. Autumn is not less beautiful than summer; the atmosphere is cooler, but in October, and sometimes in November the days are of a genial warmth, and the nights cool and refreshing. The operations on the farm at this season consists mainly of preparations for the next approaching seasons of winter and spring. The gathering and storing of root crops, the "fall" ploughing and the preparations generally for wintering stock, etc., should keep the farmer and his help busy, whenever the state of the weather permits. It is usual to have a flurry of snow some time in November, which, however, seldom lies more than a day or two, when it disappears, and the cool, open weather, with occassional heavy rains, runs well on through December, especially in the south-western districts.

There is much misconception as to the severity and unbearableness of the extremes of Canadian seasons. But neither the winter, by the rigor of its cold, nor the summer, by the intensity of its heat, should frighten away the British emigrant from the Province of Ontario. The testimony of those who have had experience of the seasons both in Britain and Ontario, is without exception favourable to the climate of the latter as being decidedly more salubrious and enjoyable throughout the whole year. It may be mentioned also that the summer days are shorter and the winter days are longer in Ontario than in Britain, and with the pure, dry atmosphere, the bright sunshine of the day-time and the clear starlit sky at night, which are common characteristics of a Canadian winter, this season, besides being one of great commercial activity, offers numerous facilities for healthful exercise and rational enjoyment, and is welcomed by many as the most delightful of all the seasons. The snow, it should be mentioned, instead of being a barrier to travel, as in many other countries, is the great improver of the roads. In winter sleighs are substituted for wheeled vehicles, and horses can then draw much heavier

loads at greater speed over the hard-packed snow, which lies on the ground in most parts of the Province from the beginning to the end of the winter season.

ACCESS TO MARKET.

The position of Ontario with respect to its means of access to the markets of the world, is superior to that of nearly every one of its competitors in the same line of products, and is surpassed by none. The wheat-growing, the stock-raising, butter and cheese exporting sections of the United States, and the great grain fields of the future in the Canadian and American North-West, are not so well placed towards the British markets (which rule the prices) as is the Province of Ontario. Its interior means of transport are ample. At half a dozen different points its railway system connects with that of the United States. Its magnificent system of lake, canal and river navigation accommodates not alone its own trade, but also a great portion of the trade of the Western States. Its seaports are Montreal and Quebec in summer, and Portland and Halifax in winter, with access at all times to Boston, New York, etc., etc. Toronto, its capital, the seat of the Government and Legislature, of the Universities and other institutions of learning, and of the Law Courts, is a fine and flourishing city of 170,000 inhabitants,* and offers a ready market for much that the farmer has to sell. It is the headquarters of the principal exporters of live stock and of the leading men in commercial and manufacturing business, and the centre of a complete network of railways extending throughout the Province in all directions. The trip from Toronto to Liverpool can now be made with ease and comfort in nine days, or even less time; and the British farmer does not require to be told that the rates of freight are such that beef, butter, cheese, etc., can be carried from Ontario, laid down in English markets and sold at prices so low that he cannot profitably compete with them. But he can secure a profitable return for his capital and his skill by transferring both to the Province of Ontario and entering on agricultural pursuits.

The markets throughout the Province are within easy reach of the farmer in every settled district. The highways are substantially made

* An official census was taken by order of the Corporation on December 12th, 1888, which showed the exact number to be 166,809. A new ward is to be added from the suburbs next year (1889), having a population of 5,583, making the total population of the city 172,392.



and kept in good repair, the towns and villages are thickly dotted over the country, being seldom more than from five to ten miles apart, and excepting in the new and far northern settlements, almost every farm is within fifteen miles of a railway station. The question of easy access to market is one which might be supposed to involve serious difficulties in a country embracing such a wide range of distances; but practically the means of transport are so ample and the freight rates so regulated and upon the whole so low, that there is no settled part of the Province in which it presents material obstacles, either as to cost or convenience.

SOIL, PRODUCTIONS, ETC.

Ontario has many varieties of soil, nearly all of which are fertile and of easy cultivation. The most common are the loams of different kinds, black, clay and sandy. There are also light and heavy clay soils, sandy soils, and in some districts marsh and alluvial soils of great depth resting on clay bottoms. The old farms are in some places partially worn out through long continued wheat cropping; but they still yield a profitable return if cultivated with the view to stock raising or dairy farming, the two branches which promise, in the future, to be the leading features of agricultural industry in Ontario, and the tendency of which is to restore and enrich the soil. On this subject, the following extract, from the report of Professor Sheldon, of the Wilts and Hants Agricultural College, England, is instructive and exactly to the point. He says:

"There are many kinds of soil in this part of the Province, most of which are fertile and easy to cultivate. The most common soils are loams of one kind or another, comprising all the varieties included in the terms "sandy" and "clay" loams; then, there are light soils of various kinds, clays and marsh soils, most of them more or less impregnated with organic matter. Many of these soils—I speak now of farms that have been long under cultivation—were at first well adapted to the growth of wheat, but it appears, that in many places, wheat has been grown so repeatedly on the land that it will no longer produce the crops of it that were formerly easy to obtain; The fact is, this one crop has been grown so very often that the land has become deficient in the elements necessary to it; the same land will, however, grow very good crops of other kinds—roots, clover, barley, peas, oats, and the like, while in some parts profitable crops of Indian corn are grown; the latter, however, is almost an inexhausting crop, even more completely so than wheat, but not so quickly, and can only be grown to profit on a rich soil and a hot climate. The difference between the two crops is this:—Wheat exhausts a soil of certain elements, leaving the rest comparatively untouched; but maize is a generally

exhausting crop, less dependent on special elements, but feeding, as it were, on all alike ; and so it follows that it can be grown for a longer time before the land shows signs of exhaustion, which at last is so thorough that fertility is restored with great difficulty. There is, however, a great deal of good wheat land in Ontario and much more of it to be cleared. The partially exhausted land, too, will come round again, and will grow wheat profitably as before, but it is only good farming that will bring this about. The farmers of Ontario declare that they would hardly have known what to do with their land if it were not for cheese-making, and particularly for the new cattle and beef trade with England. Wheat, wheat, nothing but wheat as a paying crop was simply exhausting the land, returning nothing to it ; cattle raising paid poorly, because the demand was limited ; and cheese-making could only be profitably carried on in the districts suitable to it. But the demand arising in the Old Country for beef, and the improved means of transportation over the sea, have provided a new and profitable opening towards which the energies of the farmers are being directed. The raising of stock suitable to the English market is now a leading and profitable branch in this part of the Dominion, and it is encouraging to the cultivation of root and green crops of clover, Timothy and other forage crops of green corn, etc., for soiling. The growth and consumption of these crops, indeed, is the very practice that was needed to restore fertility to soils which had been injured by over-cropping with wheat. But numbers of the Ontario farmers seem to be so wedded to wheat-raising, that rather than go extensively into stock-raising and fattening, and the growth of various rotation crops, more after the English and Scotch models, they prefer to sell out and go to Manitoba and the North-West, a territory which is *par excellence* a wheat country, and which must soon become, perhaps, the greatest granary in the world. They are the more inclined in this direction because they can sell their Ontario farms at $40 to $100 an acre, and can buy virgin soil in the North-West at $1 to $10. By a change of this nature they can easily establish their children in separate farms, a thing but few of them could hope to do in Ontario, where land is comparatively high. They have also the spirit of restlessness which permeates the Americans as well, but which is scarcely known in England."

The following eloquent tribute to the excellence of the climate and the capabilities of the soil of Ontario, is from the pen of the Hon. David A. Wells, an eminent American statesman, and is clipped from an article which appeared in the *North American Review*, several years ago. Mr. Wells speaks from an intimate acquaintance with the country on both sides of the International dividing line, and his testimony is valuable as that of one whose knowledge and experience have placed him above the influences of national or sectional prejudices. He says :—

" North of Lakes Erie and Ontario and the River St. Lawrence, east of Lake Huron, south of the 45th parallel, and included mainly within the present Dominion Province of Ontario, there is as fair a country as exists on the North American Continent, nearly as large in area as New York, Pennsylvania, and Ohio combined, and equal, if not superior to these States in its agricultural capacity. It is the natural habitat on this con-

tinent of the combing wool sheep, without a full, cheap and reliable supply of the wool of which species the great worsted manufacturing interest of the country cannot prosper, or we should rather say, exist. It is the land where grows the finest of barley, which the brewing interest of the United States must have if it ever expects to rival Great Britain in its present annual export of over $11,000,000 of malt products. It raises and grazes the finest of cattle, with qualities specially desirable to make good the deterioration of stock in other sections, and its climatic conditions, created by an almost encirclement of the Great Lakes, specially fit it to grow men. Such a country is one of the greatest gifts of Providence to the human race, better than bonanzas of silver and rivers whose sands contain gold."

This "fair country" is nearly all included in what has been already described in these pages as the organized portion of the Province, or what is generally known as "Ontario," in the social or political, as apart from the geographical sense. With reference to the south-western portion, or what is called the "peninsula"—that is the district partially enclosed or surrounded by Lake Ontario, the Niagara River, Lake Erie, Lake Huron and the Georgian Bay, embracing one-half the counties, three-fourths of the cities (8 out of 11) and perhaps more than the same proportion of all the towns and villages in the Province, has been described by Professor Sheldon in the following words :—

"This portion of Ontario may be regarded as the garden of the Dominion —literally as well as figuratively the garden—for it is there that apples, pears, grapes, peaches, melons and the like grow in the greatest profusion, and with the least trouble on the part of the farmer. Every farm has an orchard, and it is purely the farmer's fault if the orchard is not an excellent one, for the climate and the soil are clearly all that can be desired, and the trees will do their share of the work provided the right sorts are planted. It is usual to plant out peach and apple trees alternately and in rows in a new orchard, and the apple trees are at a distance apart which will be right when they are full grown; this is done because the peach trees come to maturity first, and have done bearing before the apple trees require all the room ; the peach trees are then cut down and the apple trees occupy all the room. These trees are planted in rows at right angles, so that there is a clear passage between them whichever way we look, and the land can be freely cultivated among them ; it is, in fact, usual to take crops of wheat, or oats, or maize, from the land during the time the trees are young, and we often see fine crops of golden grain overtopped by noble young trees laden with fruit. A farmer may not, of course, look to fruit alone to grow rich on, but he often nets a nice roll of dollars out of it, and to say the least, it is conducive to happiness to be well supplied with fruit, while to live in a climate and on a soil that will produce it abundantly is always desirable."

The general productiveness of the soil of Ontario, its adaptability for raising all kinds of cereals, and its superiority over every part of the United States in the production of barley, are acknowledged facts. As the seasons vary, however, and the results of the harvest are very different

in one year from another, a comparison of results as to the same crops, in two different years, will give the reader a fair idea of the relative productiveness of the different localities contrasted. With this view the following table has been prepared from reliable official sources. It gives the average yield per acre of fall and spring wheat, barley and oats, in Ontario, and also in ten of the States of the adjoining Republic, for the years 1882 and 1884:

AVERAGE YIELD PER ACRE.

In Bushels of	Fall Wheat.		Spring Wheat.		Barley.		Oats.	
In the years	1882.	1884.	1882.	1884.	1882.	1884.	1882.	1884.
In Ontario	26.3	24.0	16.5	20.2	28.6	27.3	36.4	38.9
" Ohio	16.7	15.3	.....	.....	19.9	26.0	28.0	29.0
" Michigan	17.8	14.0	.....	.....	25.2	23.0	33.3	32.0
" Indiana	15.7	13.2	.....	.....	24.0	23.0	27.0	30.0
" Illinois	16.0	12.6	.....	.....	22.5	24.0	37.4	33.0
" Missouri	14.6	.....	.....	.....	28.0	.....	34.5	.....
" Kansas	19.5	.....	.....	.....	25.7	.....	38.1	.....
" New York	18.7	16.5	.....	.....	25.0	23.0	34.2	30.0
" Pennsylvania	15.3	15.0	.....	.....	23.5	19.0	27.8	28.0
" Iowa	.....	.....	11.0	12.5	21.7	23.0	31.8	32.0
" Minnesota	.....	.....	13.3	16.1	23.3	26.4	40.0	33.3

It may be remarked that within recent years, in consequence of a change introduced in the process of making flour, the market value of spring wheat, which formerly ruled from twelve to fifteen per cent. below that of fall wheat, is now fully on a par with it, and that as a result the farmers are giving greater attention to the preparation of the soil for the spring crop, and therefore reaping a better average yield than formerly. It should also be mentioned that eight out of the ten States named in the

above table do not produce spring wheat, the conditions therein not being favourable to its profitable cultivation. This circumstance, in connection with the higher market value of spring wheat from the cause just mentioned, gives additional force to the claim that even as a grain-producing country Ontario holds the first rank.

STOCK RAISING AND DAIRY FARMING.

But flattering as the foregoing figures are to the Province of Ontario, its agriculturists are now turning their attention more and more to dairy farming and stock raising, which have been developed within a few years to an extent that has given surprising and gratifying results, both in illustrating the capabilities of the soil and in proving that such farming is far more profitable than the old system. In the extracts already given reference has been made to these subjects, but the following (also from Prof. Sheldon's report) is of interest as showing the course to be pursued in the management of such a farm :—

"The Canadian dairy farmer has several important advantages over his English contemporary, not the smallest of which is this : He can grow at a very moderate cost very large crops of forage for winter use ; clovers and timothy flourish well on most soils in Ontario, and I should say that rye grasses would also, though I did not find they were much employed, if at all, in the growth of forage. I think they might be used to advantage. It is also clear, from what I saw in many places, that he can raise abundant crops of swedes and mangolds, and very good ones of carrots, parsnips, and the like. Here, then, after the question of water, are the first requisites of successful dairy farming. A rotation of crops is just the system to re-invigorate the older soils of Ontario, which have been over-cropped with wheat, and rotations work well in dairy-farming. It is true that good natural pastures are scarce in the Province, if indeed there are any at all which deserve the name from an Englishman's point of view (the best grass land I saw in Ontario was in the neighbourhood of London and on the way to Hamilton) ; but, as I have said, clovers, etc., grow well, and they will answer capitally for pastures for a year or two, a regular succession of them being provided, and it is a simple matter to produce a large supply of green corn—that is maize before it comes to maturity—for soiling in summer when the pastures run out. The rotations may be as follows : (1) Wheat or oats ; (2) Roots and green crops for soiling ; (3) Oats or barley, seeded down with artificial grasses ; (4, 5, and, if advisable, 6) Grass for forage and pastures. These rotations admit of endless variation, and in a country where no fossilized restrictions as to cropping exist, as they do in England, the farmer can always grow the crops that suit his purpose best. The practice at Bow Park is to sow Western corn, which is a luxuriant cropper, thickly, in drills of eighteen or twenty inches wide ; in this way the space between the drills is easily horse-hoed, until the

corn is a foot or more high. The corn grows rapidly and effectually smothers the weeds and wild grasses which grow vigorously in so forcing a climate. In Canada, as in England, the axiom is true that nothing cleans the soil of weeds so effectually as a heavy cultivated crop of some kind or other. If all the Western corn is not wanted for soiling, the balance is cut and stocked while the leaf is still green, and the grain in the milk, and it is left out in the fields and fetched in as it is wanted in winter; in this way it makes very good forage, and the stalks, leaves, and ears are all passed through the chaff-cutter, and all consumed by the stock. A similar system may be followed with almost any other kind of soiling crop—that is, making into forage for winter that portion of it which is not wanted for soiling.

FRUIT, GRAPE AND FLAX CULTURE.

Fruit farming (embracing vine culture) is another branch to which the attention of the intending settler in Ontario should be directed. In *any* part of the Province of Ontario the farmer might have his orchard, and in many parts he has it; but in the early struggle with the sturdy trees of the forest the pioneer had no time to think of such luxuries, and hence the planting of orchards was neglected. For many years, however, the apple trade has been steadily growing in importance, and plums, pears and peaches, and small fruits of every kind form an important item in the marketable products of many a farm. The fruit region may be described in general terms as extending from the east end of Lake Huron, along Lake Erie, to the Niagara River, and including all the counties bordering on Lake Ontario. Though apples may be cultivated with profit in any of the settled portions of the Province, it is only in the southern region above indicated that fruit culture has up to this time received much attention, and the success which has attended it has been so encouraging that vineries, orchards and fruit gardens on a large scale are numerous in the Niagara district and westward on the same line till the County of Essex is reached, which is regarded as especially adapted for the profitable cultivation of the vine.

The capabillties of Essex for the production of grapes is thus described by M. Girardot, a native of the best wine district of Eastern France. In contrasting it with his own country, he says:—"The yield here is at least four or five tons to the acre; there, not more than two. The wines made here are equal to any in Eastern France. From twenty acres of grapes the yield of wine has averaged about 6,000 gallons, and is very remunerative, a profit of $800 (£160) per acre being frequently obtained." In the

district of country here referred to several semi-tropical fruits are brought to perfection. The apricot, nectarine and quince are easily cultivated over an area of several thousand square miles. At Niagara the almond grows out of doors, and the fig is successfully cultivated with scarcely any protection in winter, and ripens two crops in the year. Sorghum, or Chinese sugar cane, grows very well in the southern counties of the Province. Hundreds of acres are planted with this crop, and the variety known as Early Amber is said to yield as much as 300 gallons of syrup per acre.

Flax culture has been successfully carried on for several years in many parts of the Province, especially in the counties of Wellington, Waterloo, Perth and Oxford. There are about forty flax mills in operation throughout the Province, mostly in the counties named, at some of which a large business is done. The fibre is rendered into rope, binding and other twines, yarn and thread, and the seed into oil and oil cake, for all of which there is ready sale. For the cultivation of flax a friable soil with clay subsoil is very suitable. The land should be free from weeds and from five to six pecks of seed should be sown to the acre. Some of the millers agree with the cultivators to furnish the seed and to buy the crop at a specified price, usually about twelve dollars per ton, and as two tons per acre is about an average crop, that price pays for the whole cost of cultivating and harvesting and leaves a handsome margin for profit.

AGRICULTURAL STATISTICS.

LIVE STOCK.

The following table gives the export of horses, cattle and sheep from Canada during the past fourteen years, compiled from the customs returns of the Dominion. It is impossible to fix the exact proportion which belongs to the Province of Ontario, Montreal (in the Province of Quebec) being the principal shipping port. It is usually computed, however, that Ontario furnishes five-sixths of the whole. But whatever the proportion may be, it is certain that the increase in recent years is due almost exclusively to Ontario, for it is that Province which has taken the lead in the development of the cattle trade, as it did a few years before in the cheese, and is now preparing to do in the butter trade. Hence it is fair to assume that the percentage of increase indicated by the figures given, is

rather below than above the actual percentage of increase in the Province of Ontario :—

Year.	Horses.		Cattle.		Sheep.	
	Number.	Value.	Number.	Value.	Number.	Value.
		$		$		$
1874.....	5,399	570,544	39,623	951,269	252,081	702,564
1875.....	4,382	460,672	38,968	823,522	242,438	637,561
1876.....	4,299	442,338	25,357	601,148	141,187	507,538
1877.....	8,306	779,222	22,656	715,750	209,899	583,020
1878.....	14,179	1,278,728	29,925	1,152,334	242,989	699,337
1879.....	16,629	1,376,794	46,569	2,096,696	308,093	988,045
1880.....	21,393	1,880,379	54,944	2,764,437	398,746	1,422,830
1881.....	21,993	2,094,037	63,277	3,464,871	354,155	1,372,127
1882.....	20,920	2,326,637	62,106	2,256,330	311,669	1,228,957
1883.....	13,019	1,633,291	66,396	3,898,028	308,474	1,388,056
1884.....	11,595	1,617,829	89,263	5,681,082	304,403	1,544,005
1885.....	12,310	1,640,506	144,441	7,508,043	335,207	1,264,811
1886.....	16,951	2,232,623	92,661	5,916,551	359,488	1,184,106
1887.....	19,081	2,350,926	116,490	6,521,320	443,628	1,595,340

Aggregate and yearly average values for the first and last four years of the period included in the foregoing table :—

	Aggregate Values.		Yearly Average.		Increase 1884-87.	
	1874-7	1884-7	1874-7	1884-7	Aggregate	Yearly Average
	$	$	$	$	$	$
Horses.....	2,252,776	7,841,884	563,194	1,960,471	5,589,108	1,397,277
Cattle.....	3,091,689	25,626,996	772,922	6,406,749	22,535,307	5,633,827
Sheep	2,430,683	5,588,262	607,670	1,397,065	3,157,579	789,395
Totals..	7,775,148	39,057,142	1,943,786	9,764,285	31,281,994	7,820,499

It will be noticed that the value of the cattle exported in 1885, was twelve and a half times greater than in 1876, that of horses nearly four times, of sheep about two and a half times, and that the average yearly *increase* for the last four years was more than double the *total amount* for

the first four years. The growth of this trade is strikingly shewn by the fact that the value of the horses, cattle and sheep exported during the years 1884-7 was five times greater than in the corresponding years of the previous decade. The largest increase has been in the cattle trade, and the prospect of its continuing to lead is very bright, because soon the "ranchers" of the North-West will be selling their "store" cattle to be fattened for market by the Ontario farmer.

The total value of the live stock in the Province in 1887, according to the returns published by the Bureau of Industries was estimated at $104,406,665, being an increase of $6,080,868 over the average of the preceding five years. Number of animals in 1887 :—Horses, 575,361 ; Cattle, 1,948,264; Sheep, 1,396,161 ; Pigs, 832,817 ; Poultry, 6,438,361.

CHEESE AND BUTTER.

The value of the cheese exported has more than doubled within the same period, Canadian cheese being now recognized as the best made in America, and of late years it has competed not unsuccessfully with the English-made article. The following figures tell the progress of this trade in eleven years :—

	Quantity exported.	Value.
1874.....	24,050,982 lbs.	$3,523,801
1884.....	69,755,423 lbs.	7,251,989
Increase.....	45,704,441 lbs.	$3,728,788

Or an average annual increase of 4,154,949 lbs. in quantity, and of $338,980 in value during the eleven years. In 1885 the quantity exported was 79,655,367 lbs., shewing an increase over the eleven years' average of 5,744,995 lbs., and an increase over the exports of the previous year of 9,899,944 lbs., thus indicating that the average rate of progress is being rapidly accelerated. The value of that year's exportation of cheese was $8,265,240, an increase of $1,013,251 over the previous year, and of $674,271 over the eleven years' average. In 1886 the export was 85,287,817 lbs., valued at $7,291,685 ; and in 1887 it was 78,780,858 lbs., valued at $7,552,008. There were 737 cheese factories in operation in the Province in 1887, of which 628 made returns to the Bureau of Industries, shewing that 55,930,904 lbs. had been made in that year, against 37,079,896 lbs. by 440 factories in 1883. In 1887 the average value of the product, calculated on the returns from 459 cheese factories using the milk of 165,710 cows, was $27.25 per cow.

The rapid development in the cheese trade has naturally had the effect of limiting the production of butter; but nevertheless 5,716,120 lbs., of the value of $1,011,522 were exported in 1887, and efforts are being made with Government assistance, to establish creameries and improve the method of butter making, which has not as yet been very thoroughly understood among the majority of the rural population.

PROGRESS IN FIFTY YEARS.

In 1835, the population of Upper Canada (now the Province of Ontario) was about 300,000; now it is nearly two millions and a half. In that year the area of land in occupation was about 1,800,000 acres; now it is over 23,000,000 acres. In other words, the number of the population has been multiplied by eight and the area of the land in occupation by thirteen, in half a century, and this development has taken place by steady progress without any periods of phenomenal expansion followed by collapse, for every year of the whole fifty has its record of advancement, be it less or more.

The total value of the exports of the produce of the Dominion of Canada, for the fiscal year ending June 30th, 1887, as given in the last published Trade and Navigation Returns, amounted to $80,960,909. But, as has before been mentioned, Montreal and Quebec are the seaports of Ontario for seven months in the year, and as there are no customs entries of goods or animals passing from one Province to the other within the Dominion, it follows that the bulk of the exports of Ontario, consisting of timber, agricultural products, and animals and their produce, sent to the British markets are shipped from the ports named and do not appear in the Canadian Customs Returns as the exports of the Province of Ontario.

THE TIMBER AND MINING INDUSTRIES.

The timber trade, or, as it is called in Canada, the "lumber" trade, offers a safe and profitable field for the employment of capital under experienced management. By the recent award of the Judicial Committee of the Privy Council Ontario acquired undisputed sway over about ninety-three thousand square miles of territory, nearly all of which is under forest of the most valuable description, and for many years to come this industry must continue to prosper and expand.

The produce of the Mine from Ontario is shipped almost exclusively to the United States. The industry is yet in its infancy, but there are opportunities for its development to an almost unlimited extent. In the matter of iron alone it is affirmed by competent judges that the Province of Ontario is rich enough in ore to make it a successful competitor with the United States in the production of iron. Gold, silver, lead and copper mining are also being successfully prosecuted, though the principal part of the country supposed to be the richest in mineral wealth is yet almost unexplored. Iron mines of great extent exist in the eastern portion of the Province, and have been partially developed along the lines of the Ontario Central and the Kingston and Pembroke Railways. Other extensive deposits of iron have been found in the district between Lake Superior and the Lake of the Woods. The construction of the Canadian Pacific Railway from Lake Nipissing north-westward and westward to Lake Superior, and thence along the north shore of that lake to Port Arthur, has opened up a hitherto almost unexplored region of vast extent, containing immense stores of economic minerals and offering every prospect for the successful prosecution and great development of mining industry. Discoveries of copper and gold of great promise have been made in the vicinity of Sudbury, in the Nipissing district, and as there are large tracts of land in this region open for settlement and well adapted for agricultural purposes, Sudbury will probably soon become an important trade centre, being situated at the junction of the Sault Ste. Marie branch and the main line of the Canadian Pacific Railway.

Exploration has not yet been systematically entered upon, but ample provision has been made by the Government to secure private individuals in their right of discovery and give them facilities for the purchase of mineral lands, or for the working of mining claims under license. Any person may explore for mines or minerals on unoccupied Crown lands, whether surveyed or unsurveyed, and these lands may be sold by the Crown as mining lands, or, if situated within a mining division, may be occupied and worked as mining claims under license, the fee for which is $5 per year. Parties holding separate licenses up to the number of ten may form a partnership and work together, or single holders of a license may employ one or more assistants, but a license holder cannot work a claim by the agency of another person. A mining division is a tract set apart by the Government under the superintendence of an Inspector, who issues licenses and sees to the enforcement of the Mining Act and the regulations made thereunder. The public lands open for sale as mining locations may

be purchased at the rate of one dollar an acre in the Huron and Ottawa territory, and at two dollars an acre in the territory north and north-west of the River Mattawan, Lake Nipissing and French River. The patent is issued upon payment, and contains a reservation of all the pine timber on the land. The purchaser has, however, the right to cut and use the pine for building, fencing and fuel, or for any purposes connected with the carrying on of his mining operations, and (subject to the payment of timber dues) to make necessary clearings for cultivation, but any holder of a Government timber license may enter upon the location and cut and remove the timber and make all necessary roads for that purpose.

The Province of Ontario having been invited to participate in the "Centennial Exposition of the Ohio Valley and Central States," held at Cincinnati, Ohio, from 4th July to 27th October of the present year (1888), a "mineral exhibit" of the Province was prepared and placed under the direction of the Deputy Minister of Agriculture, containing specimens of all the economic minerals and mineral productions of the Province. The exhibit, neatly and systematically arranged in 413 lots, contained upwards of two thousand specimens and attracted very general attention to the vast mineral resources of the Province. With the view of still further enlightening the public on this subject the Government appointed a Mining Commission (of which the Deputy Minister of Agriculture acted as Secretary) to take evidence at various points in the mineral regions throughout the Province with the view of obtaining a more complete knowledge of the extent and variety of the mineral deposits and of the means to be adopted for their profitable development. The Commission commenced its sittings in August and continued to take evidence until December, 1888. A report of its proceedings will be communicated to the Legislature at the next session (in 1889), and no doubt further measures will be adopted to facilitate the development of this important industry. Throughout the whole of the mineral region in the northern and western parts of the Province there are tracts of more or less extent that are well adapted for agricultural purposes. The proximity of mining operations will afford the advantage of a local market, as well as opportunity for occasional employment to the settlers, so that farming settlements in these regions will become prosperous in proportion to the growth of mining enterprise.



FACILITIES FOR OBTAINING FARMS.

Many Ontario farmers are still wedded to the old system and do not readily adapt themselves to the changes which the general advance in agriculture imposes on those who would make farming a financial success. Hence, finding their farms becoming gradually impoverished by repeated cropping with grain ; finding also that the reduced yield is still more reduced in value by the lower prices now ruling in the markets, they naturally desire to sell and turn their steps towards the boundless Canadian North-West, which is now looked upon as the future granary of the world, where they can take up land for nothing, or acquire a large farm at an average cost of a dollar an acre, and resume the cultivation of their favourite grain on a soil so deep and rich that it seems capable of defying the exhausting effects of repeated cropping for many generations to come. Whatever be the cause, this is the tendency of population in Canada as it has been and is still in the United States : the older settlements in the east send forth their emigrants who settle upon and cultivate the virgin soil of the west ; and thus by degrees a homogeneous nation is being built up, and room is made in the old settlements for those who leave the still older and more crowded countries in Europe to make for themselves a home in America.

Following this law of the movement of population, Ontario has already contributed many settlers to Manitoba and the North-West, and their leaving this Province has tended in some measure to reduce the price of land and render the acquisition of farms much easier than it would have been but for the opening up of the North-West. Many English farmers may prefer going at once to these new regions instead of settling in Ontario, but, as Professor Sheldon says, it seems a nice arrangement that English farmers of capital should take the places of the Ontario farmers who go to the west. "It would seem," he adds, "that the systems of farming to which English farmers have been long accustomed are well adapted to restore the condition of the land, while Canadian methods are better suited to the present condition of the North-West." There is much truth in these reflections. The change from Britain to Ontario may be made with advantage to the one, while the change from Ontario to the North-West may be equally beneficial to the other, and this for the obvious reason that British methods of farming are better adapted for Ontario under the changed conditions of the markets of the world, while Ontario methods may still prove profitable on the prairies.

PRICE OF FARM LANDS.

The price of farming land varies much according to locality. In the neighbourhood of the cities and large towns in the old settled districts it ranges from $75 to $100 (£15 to £20 sterling) per acre, exclusive of the value of the buildings, and from these figures it runs all the way down to $2 (eight shillings sterling) per acre for partially cleared farms in the newly settled districts in the northern and north-eastern part of the Province. But in speaking of the price of a farm in Ontario, it is usually rated at so much per acre, including buildings, fencing, and all fixed improvements; hence many of the so-called highly-priced farms may carry a charge of twenty dollars or more per acre on account of the value of the dwelling house, stables, barns and other outbuildings, which are sometimes very commodious, substantial structures of brick or stone, costing from $2,000 to $5,000, or more.

The price for good farms in the best agricultural districts in the old settlements, away from close proximity to the cities, ranges from $40 to $75 (£8 to £15) per acre, and at this figure usually a large amount of the purchase money may remain unpaid for a term of years, secured by mortgage at a rate of interest not exceeding six per cent. In the newer counties, where the land is but partially cleared, where a half or three-fourths of the farm is still in its primitive wooded condition, or "in bush," as the local phrase has it, prices range from $10 to $40 (say £2 to £8) per acre for really good farms, in good situations, to still lower figures where the situation and soil are not so favourable.

The *average* value of farm land and farm buildings throughout the entire Province, as shewn by the returns for 1887 to the Bureau of Industries, is $29.22 per acre for land and $8.47 per acre for buildings, or a total of $37.69 per acre. The following are the four highest and the four lowest

COUNTY AVERAGE VALUES PER ACRE:—

COUNTIES.	Land.	Buildings.	Total.
	$ c.	$ c.	$ c.
York	52 23	15 84	68 07
Wentworth	50 27	18 04	68 31
Oxford	50 48	14 84	65 32
Middlesex	49 29	12 80	62 09
Haliburton	1 70	39	2 09
Renfrew	7 53	2 66	10 19
Frontenac	13 11	4 23	17 34
Lanark	13 30	4 57	17 87



The average value in the Districts of Muskoka, Parry Sound and Algoma is $4.42 per acre for land and $1.08 per acre for farm buildings : total, $5.50 per acre.

The low prices prevailing in the districts named and also in the Counties of Haliburton and Renfrew may be accounted for in part by the want of ready access to market, and in part by the general inexperience of the first settlers. In these districts the settlers have gone in and made a beginning, and though doing comparatively well, have caught the "western fever," and desire to sell out and go off to new regions. It is the old spirit of pioneer life, which has manifested itself more or less in almost every section of Ontario. The man who clears the farm, or a considerable part of it, unless he has been brought up to agricultural life, prefers selling out and taking up another "bush lot," because "clearing" has become to him a trade with which he is familiar, and he would rather follow it than trouble himself to master the details of practical farming.

In this way many railway labourers, mechanics, weavers, and other tradesmen from the old world became successful pioneer farmers in Canada; but though successful in the early process of clearing and preparing the soil, many of them have not been equally fortunate as practical cultivators of cleared farms. These and such as these are the men who are now casting their eyes about them for a purchaser for their "clearance" to enable them to resume their pioneer life either in the North-West Territories or in the north-western region of Ontario, in which there are large tracts of rich soil under the unbroken forest that offer to the settler the same prospect as did a considerable portion of the now flourishing counties of Huron, Grey and Bruce, twenty-five or thirty years ago.

In this region of cheap farms, which lies immediately north of the oldest-settled portions of the Province, and on the eastern shore of the Georgian Bay, stock-raising and sheep-farming might be followed with profit, as the land is exceptionally well watered, produces enormous root crops and is admirably fitted for grazing purposes. In this region a large area of land might be acquired for a less sum than would purchase a hundred acres on the frontier, while ordinary skill in the branches of agricultural industry just indicated could not fail to secure a handsome return.

RENTED FARMS.

It is generally sound policy for an immigrant, even if he has the means to buy a farm when he lands in the Province, to put himself in the way of acquiring some experience of the country before he makes a purchase. This may be done in two ways: If disposed to undertake the manual labour of the farm he can hire out for a season or two, or should he deem that course unsuitable he can readily rent a farm for a short term of years, one, two or three years' leases being not uncommon, at a moderate rental of from $2 to $4 per acre, payable in money, or for a certain portion of the crop, etc., (say one-third) in kind. The latter arrangement is not recommended to a stranger; it is better for him to make his bargain for so much cash. In renting farms it is usual only to calculate the rental on the number of cleared acres, and it may be laid down as a general rule that farm rents in Ontario are sometimes below and seldom exceed four per cent. of what is considered the selling price of the farm. The returns for 1887 show about fifteen per cent. of the farming land of the Province under lease at an average rental of $2.83 per acre of cleared land.

LANDS FOR SALE TO ACTUAL SETTLERS.

In the Algoma district there are a number of townships in which the government lands are open for sale at the rate of twenty cents (about nine pence halfpenny sterling) per acre, subject to the following conditions: Actual residence for three years from the date of purchase; clearing and having under cultivation at least ten acres for every one hundred acres purchased; and building a habitable house at least sixteen by twenty feet. The pine trees are reserved until the 30th April after the issue of the patent. Agencies for the sale of these lands are established at Bruce Mines and Thessalon (see map). Subject to the same conditions, except that the residence must be for four years, the agencies at Sudbury and Sturgeon's Falls, on the Canadian Pacific Railway, have government lands for sale in the adjoining townships at the rate of fifty cents (two shillings sterling) per acre, one-half payable at the date of purchase and the balance in two years, with interest at the rate of six per cent.



FREE GRANT LANDS.

There are now one hundred and thirty-three townships open for location under the "Free Grant and Homestead Act, of 1868," each containing from 50,000 to 60,000 acres. Other townships will be opened as railways and colonization roads are constructed. There are eighteen local agencies established throughout the free grant districts, each agent having a specified number of townships assigned him. The principal agencies are at the following places: Bracebridge, Parry Sound, Nipissing, Mattawa, Pembroke, Eganville, Bruce Mines and Port Arthur.

The following is a summary of the regulations respecting Free Grants:—The Lieutenant-Governor in Council is authorized to appropriate lands, not being mineral lands or pine timber lands, as free grants to actual settlers, under regulations to be made for that purpose; no such grant to be made to a male under eighteen, or for more than 200 acres. Failure to perform the settlement duties forfeits the location. The head of a family, whether male or female, having children under eighteen years of age, can obtain a grant of 200 acres, and a single man over eighteen years of age, or a married man having no children under eighteen residing with him, can obtain a grant of 100 acres in the Free Grant Districts.

Any locatee under the Act, being the head of a family as aforesaid, is allowed to purchase an additional 100 acres at 50 cents per acre, cash, at the time of such location, subject to the same reservations and conditions and the performance of the same settlement duties as are provided in respect of Free Grant locations by the 9th and 10th sections of the Act, except that actual residence and building on land purchased will not be required.

The settlement duties are:—To have fifteen acres on each grant cleared and under crop, of which at least two acres are to be cleared and cultivated annually for five years; to build a habitable house, at least 16x20 feet in size; and to reside on the land at least six months in each year.

RAINY RIVER DISTRICT.

By an Act passed at the session of the Legislature, held in 1886, the Free Grant system is extended to the Rainy River District upon the same terms and conditions of settlement as above set forth. The quantity of land

which may be obtained is one hundred and sixty acres to a head of a family having children under eighteen years of age residing with him (or her); and one hundred and twenty acres to a single man over eighteen, or to a married man not having children under eighteen residing with him: each person obtaining a free grant to have the privilege of purchasing forty acres additional at the rate of one dollar per acre, payable in four annual instalments. Several townships have already been surveyed on the Canadian bank of the Rainy River on the one mile square section plan—the same as has been followed in the North-West. The Ontario Legislature has adopted and legalized these surveys by the Act just mentioned, and provided that any lands in the Rainy River District considered suitable for settlement and cultivation may, by Order in Council, be appropriated as free grants upon the terms specified. The Rainy River District is the western division of Ontario, bordering on Manitoba, and comprises a large area of the most valuable timber lands in the whole Dominion. The Rainy River itself marks the International boundary line, and its valley, which is the most extensive in the district, is admirably adapted for agriculture, the soil being a rich alluvial deposit, and considered equal in fertility to the best lands in Manitoba and the North-West. Here are located the townships set apart as free grants, and in addition to a soil that is as rich as the most favoured portions of Manitoba and the North-West prairies, the settler will have the important advantages of an unlimited supply of wood and water. The river is about eighty miles in length, and the whole of the right, or Canadian, bank is covered with a heavy growth of forest trees, shrubs, climbing vines and beautiful flowers. The forests in the district are of immense value, and the lumbering industry which will undoubtedly be prosecuted there on an extensive scale will make farming a profitable undertaking in Rainy River valley. The climate is similar to that of the old settled parts of the Province, and the luxuriance of the vegetation gives evidence of the richness of the soil. All kinds of grain, roots and garden vegetables yield abundant crops, as has been proved by the few settlers who have already taken up land in the neighbourhood of Fort Frances, which is situated on the river bank about two miles from Rainy Lake. The name of Alberton has been given to this settlement.



SETTLER'S EQUIPMENT.

In order to make a successful settlement upon a free grant the settler should have at least £60 to £100 ($300 to $500) after reaching his location. But immigrants on their arrival in the country are advised to go out first for a year or more as agricultural labourers. The experience thus acquired will far more than compensate for the time lost. The settlers are always willing to help new comers. A house, such as is required by the Act, could be erected by contract for from £8 to £10 ($40 to $50); but with the assistance the settler would certainly receive from his neighbours it might be erected for even less. The best season of the year to go on to a free grant is the month of September, after harvest work in the old settlements is over. There is time to put up a house and get comfortably settled before the winter sets in, and during the winter the work of chopping and clearing can go on. In this way a crop can be got in during the first spring. The operation of putting in the first crop is a very simple one. Ploughing is at once impracticable and unnecessary. The land is light and rich. All it needs is a little scratching on the surface to cover the seed. This is done with a drag or harrow, which may either be a very rough, primitive implement, or it may be carefully made and well finished.

FARM LABOURERS AND DOMESTIC SERVANTS.

From the beginning of April till the end of October there is always a steady demand for farm labourers, especially for single men. More than double the number arriving could easily find employment by the year at fair wages. It must, however, be understood that only experienced men are wanted by the year. A single man who can plough well, and who has had some experience in taking care of stock, can readily obtain employment at about $150 per annum with maintenance, with a prospect of considerable increase if he should be found to be a good trustworthy man. The average rate of wages throughout the Province in 1887 was $159 with, and $250 without board for the year. Some farm hands who arrived in May of this year (1888), and worked by the month until October secured with the same employer a yearly engagement from that date at $175 and board. Employment in the winter months is rather

scarce, but competent men arriving in the spring are eagerly sought for at rates varying from $15 to $20 per month till October; and youths during the same period command from $8 to $15, in each case with board. Should thirty or forty come together and advise the Immigration Department on their arrival at Quebec, farmers would certainly be in waiting at Toronto to employ them.

Families of farm labourers can find ready employment if they are experienced and have the means of providing a little furniture and provisions. If there are young women in the family, able and willing to take places as servants, so much the better.

The demand for female domestic servants is constant everywhere throughout the Province at all seasons of the year. The rate of wages for experienced servants ranges from $8 to $12 per month. Good general servants can readily find employment at from $7 to $10 per month on their arrival. Young women, however, who are not able or willing to work will not succeed in the Province.

Full information regarding all matters connected with immigration. will be furnished on application, personally or by letter, to

DAVID SPENCE,
Secretary of the Department of Immigration.
65 SIMCOE ST., TORONTO.

Or to

PETER BYRNE,
Nottingham Buildings, 19 Brunswick St..
LIVERPOOL, ENGLAND.



ONTARIO—MISCELLANEOUS.

Ontario has long been the envy of other lands on account of its Experimental Farm and Agricultural College; and it has again come to the front by the founding of an "Agricultural and Experimental Union," an association formed as a bond of union amongst the officers and students, past and present, of the Ontario Agricultural College and Experimental Farm, to promote their intercourse with the view of mutual information; to discuss subjects in the field of agriculture, with its allied sciences and arts; to conduct experiments, and to meet at least once annually to hear papers and addresses delivered by competent parties and to report upon the labors of the past year. The annual membership fee is only 50 cts. The association has been in existence nine years, and the ninth annual report, issued in Jan., 1889, shows the experimenting staff and general membership to be increasing year by year. In addition to the line of experiments in grain-growing, the Union has decided to conduct a series of experiments in horticulture, dairying and bee-keeping. The Union has the sanction and encouragement of the Ontario Government.

EDUCATIONAL.

The following facts and figures are gleaned from the report of the Ontario Minister of Education for 1888:—

ATTENDANCE AT PUBLIC SCHOOLS.

Year.	School Age.	School Pop.	Number of Pupils registered.	Boys.	Girls.
1885	5—21	583,147	472,458	249,175	223,283
1886	5—21	601,204	487,496	257,030	230,466
1887	5—21	611,212	493,212	259,083	234,129

The average attendance of rural pupils was 46 per cent. of the registered attendance, while in towns it was 60 per cent., and in cities 62 per cent.

PUBLIC SCHOOL TEACHERS AND SALARIES.

Year.	No. Teachers.	Male.	Female.	Highest Salary.	Average Sal. Male.	Av. Sal. Female.
1885	7,218	2,744	4,474	$1,200	427	281
1886	7,364	2,727	4,637	1,200	424	290
1887	7,594	2,718	4,876	1,450	425	292

PUBLIC SCHOOL HOUSES, MAPS AND TEACHING DAYS.

Year.	Number Schools open.	No. Maps in use.	Legal Teaching days.
1885	5,395	40,116	208
1886	5,437	40,663	208
1887	5,506	40,711	208

The number of maps now used amounts to 40,711. In 1850 there were only 1,814. The expenditure on apparatus and prizes in the last eleven years amounted to $295,940, and the expenditure on school buildings to $4,054,283.

RECEIPTS AND EXPENDITURE, PUBLIC SCHOOLS.

Year.	Total Receipts.	Total Expenditure.	Average cost per pupil on total attendance	On average attendance.
1885	$3,813,066	$3,312,700	$7 01	14 66
1886	3,993,483	3,457,699	7 09	14 46
1887	4,331,357	3,742,104	7 59	15 26

Nowithstanding the large expenditure for school sites and buildings, and the large increase to the teaching staff of the country, the cost per pupil has but slightly increased in eleven years. In 1887 it was 50 cents per pupil more than in 1886. The average cost per pupil on the number enrolled in 1887, for counties was $6.82; for cities, $12.01; and for towns, $7.40, or an average of $7.59 for the Province. In 1877 the average cost was, for counties, $6.01; for cities, $7.52; for towns, $6.51, or an average of $6.26 for the Province.

ROMAN CATHOLIC SEPARATE SCHOOLS.

Year.	No. Schools.	No. Teachers.	No. Pupils.	Receipts.	Expenditure.
1885	218	453	27,590	$218,096	$204,531
1886	224	461	29,199	193,908	179,730
1887	229	491	30,373	229,848	211,223

HIGH SCHOOLS AND COLLEGIATE INSTITUTES.

Year.	No. Schools opened.	No. Teachers.	Total Receipts.	Total Expenditure.	No. Pupils.	Average Attendance.
1885	107	365	$458,941	429,762	14,250	8,207
1886	109	378	502,315	477,797	15,344	8,797
1887	112	398	529,323	495,612	17,459	10,227

The cost per pupil on the total attendance was $30.16 in 1885, $31.14 in 1886, and $28.38 in 1887.

Examinations in kindergarten work were held at Hamilton, Ottawa and Toronto in 1888, and out of 68 candidates, 12 passed for directors, and 13 for assistants.

County Model schools were established in 1887, and from then till 1888 they have been attended by 14,154 teachers. In 1888 there were 57 of these with 1072 teachers in training.

NORMAL AND PROVINCIAL MODEL SCHOOLS.

Year.	Number of Normal School Teachers.	Number of Normal School Students.	Number of Model School and Kindergarten Teachers.	Number of Model School and Kindergarten Pupils.	Receipts from Fees of Model School and Kindergarten Pupils.	Expenditure, Normal and Model Schools.
					$ c.	$ c.
1885.....	12	405	17	658	11352 50	38257.11
1886.....	11	439	18	660	11625.50	37477.89
1887.....	13	441	18	763	13427.00	40131.24
1888	12	445	21	764	14595.00	39495.86

TRAINING INSTITUTES.

There are now five Training Institutes in the Province, viz., one at Guelph, Hamilton, Kingston, Owen Sound and Strathroy. The attendance in 1888 was 46; the number who wrote at the final examinations was 116, and the number who passed 87.

TEACHERS' INSTITUTES.

There were in 1887 66 Teachers Institutes with a total membership of 6,718. Towards these the Government grants were $1,800 and municipal grants $1,879. The amount spent in the year for libraries was $1,234.

MECHANICS' INSTITUTES AND FREE LIBRARIES.

There are now (1888) in operation 186 Mechanics' Institutes and Free Libraries. Twenty-three new Institutes have been incorporated and opened to members within the year. The total number of Mechanics' Institutes and Free Libraries reporting this year is 167, with 18,176 members and 13,840 readers, with property valued at $403,573. The total expenditure of 167 Mechanics' Institutes and Free Libraries for the past year was over $96,360. The sum of $29,500 was expended for books and bookbinding, and 744,466 books were issued to members and readers. One hundred and four Institutes and Free Libraries reporting provide reading rooms fitted with the necessary equipment for the comfort of readers; $8,692 have been expended for the purchase of 1,575 periodicals and

1,466 newspapers; forty-one Institutes and Free Libraries had in operation evening classes, with an attendance of 1,002 pupils in the English and commercial courses; and eighteen Institutes conducted evening classes in primary, advanced and mechanical drawing, with 408 pupils. The total expenditure for evening classes was $2,671.

The following comparative statement shows the progress made within the past seven years, during which time the Education Department has had the administration of this important branch of our educational system.

In 1881, ninety-six Institutes reported.
In 1888, one hundred and sixty-seven Institutes and Free Libraries reported.
In 1881, twenty-one Evening Classes were in operation.
In 1888, fifty-seven Evening Classes were in operation.
In 1881, the total receipts reported were $48,321.00.
In 1888, the total receipts reported were $103,843.68.

ART AND TECHNICAL SCHOOLS.

There are now in operation eight Art Schools in different cities with 808 pupils. At the present (1889) session of the Legislature, the Minister of Education is submitting a scheme for a comprehensive system of technical education, developed from the present School of Practical Science. It is proposed to add iron and wood working, mill operations, ultimately textiles, dyeing and other subjects to those already taught in the present institution.

The efforts made by the Education Department to secure the planting of shade trees and the cultivation of flowers in the school grounds, are heartily supported by teachers and trustees. Arbor Day has now become one of the most interesting and profitable holidays of the year. In 1885, 38,940; in 1886, 34,087; and in 1887, 28,057 trees were planted. In a very few years every rural school in the Province will have its pleasant shady bower where the pupils can find shelter from the scorching sun during the summer months, and where their taste for the beautiful in nature will find some gratification.

INSTITUTION FOR THE DEAF AND DUMB.

The number of persons in attendance at this institution (see p. 52 of "Educational System of Ontario") in 1887-88 was 265, of whom 156 were males and 109 females. The total expenditure in 1888 was $41,967 or $176.33 per pupil. The total number of pupils since

the institution opened is 786. Of these 311 were congenital mutes, 332 became deaf between the ages of 1 and 6 years, 42 between 6 and 15 years old, and 101 at unknown ages. The relationship of the parents of the 786 was as follows :—The parents of 54 were first cousins, of 12 second cousins, of 9 third cousins, of 17 distantly related, of 671 not related, and 23 unknown. Of the occupations of the parents 348 were farmers, 141 laborers, 15 merchants and 26 carpenters.

INSTITUTION FOR THE BLIND.

The report of this institution (see p. 54 "Educational System, Ontario") for 1888 shows that the average attendance was 132, the total attendance 156, of whom 94 were males and 62 females. Total expenditure $36,710; cost per pupil $278.10. Of the occupations of the parents 48 were farmers, 23 laborers, 9 merchants and 9 carpenters, the rest being chiefly tradesmen. The relationship of the parents is not given. The pupils' library has 1,650 volumes in embossed print and 400 in point print; and the teachers' library has 1,400 volumes.

REFUGES AND CHARITABLE INSTITUTIONS.

The report of the Inspector of prisons and charities for 1888 shows that there are 26 houses of refuge and charitable institutions supported or aided by the Provincial Government. The total number of inmates was 2,362, of whom 1,376 were females. The nationalities were as follows: Canadian 410, American 63, English 400, Irish 1,317, Scotch 130, other countries 42. The total Government grant was $35,210, amounts received from other sources $87,512.

The average yield of fall wheat in Ontario for the six years ending 1887 was 20.2 bush. per acre, the highest of any American state in the same period was that of Michigan 15.9 bush.; the yield of oats in Ontario in the same period was 35.7 bush. per acre, that of Illinois the foremost American state 34.0.

Ontario produces about four-fifths of all the cheese exported from Canada, though the shipments are chiefly made through the port of Montreal.

The shipments of turkeys and geese from a single county in Ontario—that of Lanark—in 1888 to the Boston market weighed 220 tons and were valued at $44,000. One shipment consisted of a train of 19 cars loaded entirely with turkeys.

The most extensive apiary in the world is said to be one near Beeton, Ontario. It covers four acres, and the owner, in a favorable year, secures not less than 75,000 pounds of honey from his 19,000,000 little workers.

The value of farm buildings in 1887 in Ontario was estimated at $184,200,000, and of live stock $104,200,000.

Out of 565 patents granted to Canadians in 1888 throughout the whole Dominion, 354 were to Ontario inventors.

Ontario's position in the Dominion, from a literary and business standpoint, may be estimated by the subjoined figures taken from the report of the Postmaster General for 1888. The figures for Nova Scotia, New Brunswick, Prince Edward Island, British Columbia and Manitoba and the Territories, taken together, are about equal to those of the province of Quebec, and Ontario compares with Quebec as follows, in regard to mail matter passing through its postoffices :—

	Letters.	Postcards.	Registered letters.	Books, circulars, &c.
Ontario	43,500,000	11,000,000	2,050,000	12,700,000
Quebec	18,300,000	3,150,000	820,000	3,700,000
Total for Dominion	80,200,000	16,586,000	3,580,000	17,810,000

	Postage Stamps issued—value.	No. money order offices.
Ontario	$1,520,290	505
Quebec	586,820	148
Dominion	2,728,026	944

Among the numerous railway enterprises, projected or in course of construction in Ontario, one which will have an important influence in developing the resources of the country in a comparatively unexplored region is a railway proposed to be built from some point on the upper Ottawa to James Bay, the southern arm of Hudson Bay, to which the boundary of the province now extends. The cut of lumber from Pembroke to Sudbury in 1888 was estimated at 750,000,000 feet. But apart from the lumber regions which might be opened up, this northern region is undoubtedly rich in minerals, the Huronian system of rocks extending over about 300 miles of the proposed road. The gold-bearing rocks of Denison township extend north-east in this direction, and large deposits of argentiferous galena are now being worked on Lake Temiscamingue, other similar deposits with copper, gold and silver being discovered last year around lakes lying between Lake Temagami and Montreal river. Asbestos and iron ore have also been found, with gypsum, coal and mica; and the construction of such a railway with further explorations would doubtless open up mineral and other resources yet unknown.

There are at present under construction or contract within Ontario 1142 miles of new railway, exclusive of the double tracking of the main line of the Grand Trunk now in progress east of Toronto. Among these works may be mentioned the following as in course of construction:—Napanee, Tamworth & Quebec Ry., an extension from Tamworth to Tweed on the C.P.R., with a branch from Yarker to Harrowsmith; South Norfolk Ry. from Simcoe to Port Rowan, connecting with the Grand Trunk system; Guelph and Pacific junction, a branch from near Campbellville on the Credit Valley to Guelph; South Ontario Pacific, from Toronto to Hamilton; Ontario and Quebec Ry., an extension of the C.P.R. system from London to Windsor; Brockville, Westport and Sault Ste. Marie Ry., a branch between Lyn and Brockville; Lake Erie, Essex and Detroit River Ry., from Walkerville to Harrow and Kingsville; and St. Catharines and Niagara Central Ry., from Niagara Falls to St. Catharines.

Prior to the Confederation there were 1455 miles of railway in operation in Ontario, and since then to the close of 1888 4153 miles have been added, making at present, with the double tracked Grand Trunk, about 7000 miles.

The report of the Ontario Crown Lands Department for 1888 shows the revenue collected in the department for that year was $1,450,089, of which total $1,316,139 came under the "woods and forests" branch, other items of revenue being collected under the head of clergy lands, crown lands, common school lands, grammar school lands, with fishing permits and game licenses. The report shows there are now 133 new townships open for settlement in the province. There were during the year 220 miles of new colonization roads constructed and 30 bridges erected upon them, at a cost of $112,273.

Within the past fifteen years the reputation of Ontario clover seed has advanced in pace with its reputation in cattle and dairy products, and to-day its leading grass seeds stand in the London market above the products of any other country, both for quality and cleanness. Germany and France formerly stood first, but a recent report showed that Ontario Alsike brought 25 p.c. more, its red clover 5 to 10 p.c. more, and its timothy 15 to 20 p.c. more than the grass seeds of Germany or any other country. Hurst & Sons, the English seed merchants, in a recent circular said: "For quality and cleanness Canadian clover seed cannot be equaled;" and A. Cross & Sons, of Glasgow, in the same season observed that while other seeds were only medium, Canadian seeds were "fine, dark and clean." These seeds now find their way not only to Great Britain but thence to many foreign coun-

tries, a direct shipment being recently made to New Zealand. In a recent season three Toronto merchants exported over 250 carloads of grass seeds, valued at $500,000.

From the sixth annual report of the Ontario Bureau of Industries (Mr. Archibald Blue, secretary) issued in 1888, the following facts are taken, the figures being for the calendar year 1887 in all cases not otherwise specified. The farm lands in the province according to the assessors' returns were 21,799,017 acres, of which only 924,796 belonged to persons non-resident on the lands. The proportion of this cleared was 11,108,358 acres, with 8,538,783 acres in wood land, and 2,151,876 in swamp or marsh land. Acreage in crops as follows: fall wheat 897,743, spring wheat 484,821, barley 767,346, oats 1,682,463, rye 68,362, pease 726,756, Indian corn 163,893, buckwheat 64,143, beans 20,275, potatoes 140,283, mangold wurzels 17,924, carrots 9,110, turnips 105,322, hay and clover 2,280,643. The area in pasture was 2,528,939 acres. The area of orchards was 181,442 acres. The appended table shows the number of head of live stock in the province, there being of all classes of live stock 51.8 head per 1000 acres.

		1887.
Horses		575,361
Horned cattle		1,948,264
Sheep		1,396 161
Hogs		832,817
Turkeys	409,598	
Geese	428,055	
Other fowls	5,600,708	
Total poultry		6,438,361

The following are statistics of cheese making: Factories reported in operation 737, milk used 691,934,579 lbs., cheese made 64,204,520 lbs., value of cheese $6,236,506, average value per lb. 9.7 cts., average number of cows per factory 361, average yield of milk per cow 2,719 lbs. The total creameries or butter factories reported in operation was 42, of which 23, making butter exclusively, sent returns The amount of butter made by those reporting was 857,218 lbs. against 616,054 in 1886. The value of the product was $173,951, number of cows 10,758. No attempt has been made to collect the statistics of the private dairies. In apiculture 651 beekeepers reported having 23,828 hives in winter quarters; the produce of the season being 112,277 lbs. comb honey, 499,093 lbs. extracted honey, and 6,686 lbs. wax, the value of the products being $67,237. Under the head of "values" the following figures are given:—value of farm lands $636,883,755, farm buildings $184,753,507, farm implements $49,248,297, farm live stock $104,406,655, farm property $975,292,214; marketable value of crops—fall wheat $11,321,439, spring wheat $4,393,831, barley $9,715,448, oats $17,247,443, rye $442,969, pease $6,804,892, Indian corn $2,412,164, buckwheat $461,409, beans $270,180, hay and clover $35,947,748, potatoes $6,705,784, carrots $589,592, turnips $9,266,970, wool $1,029,473 (or $1.23 per fleece).

EDUCATIONAL SYSTEM

OF THE

PROVINCE OF ONTARIO.

DOMINION OF CANADA.



Toronto:
PRINTED FOR THE DEPARTMENT.



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EDUCATIONAL SYSTEM OF ONTARIO.

INTRODUCTION.

THE Educational progress of the Province of Ontario (formerly Upper Canada) was, at first, of very slow growth.

In 1798 an unsuccessful attempt was made to endow out of the public lands, granted for that purpose by George III. to the extent of 800,000 acres, a grammar school in each of the four districts into which the Province was then divided, and a central University at York (now Toronto). But the sale of these lands was so slow, and the price per acre obtained for them was so small, that the revenue derived from this source barely defrayed the cost of management, consequently the grammar school scheme was abandoned, as well as that respecting the college.

In 1807 the first legislative enactment was passed, establishing a classical and mathematical school in each of the eight districts into which Upper Canada was then divided. A grant out of the public revenue of £80 sterling ($400) a year was made to each of these schools.

In 1816—nine years after the establishment of the grammar schools—the Legislature of Upper Canada passed the first common, or elementary, school law for that Province. It appropriated $24,000, or nearly £5,000 sterling, per annum, for the support of the schools to be established; and provided for the management of these schools by trustees elected by the inhabitants in the localities concerned.

In 1822 a Board of Education for Upper Canada was established under the presidency of Ven. Archdeacon Strachan, then residing in York (Toronto). It had under its supervision the district grammar schools, and had also the management of the University and grammar school lands which had been granted for these purposes by His Majesty George III. in 1798. In 1824 a small grant was made to aid in the introduction of common and Sunday-school libraries into the less sparsely settled portions of the country. It was not, however, until 1835 that any systematic or vigorous effort was made by the public men of the time to establish a system of education.

In 1836 a Commission was appointed, consisting of Dr. Thomas *Duncombe, M.P.P., Dr.* Thomas D. Morrison and Dr. Bruce, to obtain

evidence and to prepare a report on a system of education for the Province. An elaborate report on the subject was prepared by Dr. Dunscombe, and also on the state of education in the various parts of the United States of America which he had visited. He also prepared a comprehensive draft of a Bill to promote public elementary education, which was printed with the report. It was introduced into the House of Assembly and passed, but failed to pass the Legislative Council. The political crisis which so quickly followed and culminated in the outbreak, or rebellion, of 1837–8, overwhelmed in confusion all legislation, and prevented further attention being given to the subject for the time.

Immediately after the union of the two Canadas, that is, in 1841, a Bill was introduced by Solicitor-General Day (subsequently Hon. Mr. Justice Day) into the united Parliament and passed, establishing common schools in each of the two Provinces, and authorizing the establishment of "Roman Catholic Separate Schools" in Upper Canada (in cases where the teacher of the public school was a Protestant and *vice versa*); and "Dissentient Schools" in Lower Canada (in cases where the teacher of the public school was a Roman Catholic and *vice versa*).

In 1842 it was considered desirable to supersede this Act by one more applicable to the circumstances and wants of each Province. A School Bill for each Province was accordingly passed by the Legislature. The "Separate" and "Dissentient" school provisions were, however, retained in each case.

In 1844 a further impetus was given to public education in Upper Canada by the appointment to the office of Chief Superintendent of Education, of Rev. Egerton Ryerson, D.D., who speedily set himself to reconstruct, upon a broader and more comprehensive basis, the entire system of public elementary schools. As a preliminary step he devoted a year to the examination and comparison of the systems of education in Europe and America, and embodied the results in a "Report on a System of Public Elementary Instruction in Upper Canada." This valuable report, presented to the House of Assembly in 1846, sketches in an able manner the system of education which Dr. Ryerson subsequently so successfully established in the Province.

The system may be said to be a combination of the best elements of the systems of several countries. Thus the Province is, in a great degree, indebted to New York for the machinery of our schools; to Massachusetts for the principle of local taxation upon which the schools are supported; to Ireland (originally) for the series of textbooks; and to Germany for the system of Normal School training. All are, however, so modified and blended together to suit the *wants* and circumstances of the country, that they are no longer
ign, but are incorporated as part and parcel of our system of
c Instruction.

THE EDUCATIONAL SYSTEM OF ONTARIO.

The School system of Ontario will now be considered somewhat in detail. Education is one of the subjects within the exclusive jurisdiction of the Provinces which compose the Confederation of Canada.

The administration of the Educational System of Ontario is provided for by statute (48 Vic., ch. 48), as follows:—

"1. There shall be a Department of Education, which shall consist of the Executive Council, or a Committee thereof appointed by the Lieutenant-Governor; and one of the said Executive Council, to be nominated by the Lieutenant-Governor, shall hold the office of 'Minister of Education.' (R. S. O. c. 203, s. 1.)

"2. The office of Minister of Education may be held by a member of the Executive Council holding no other office; and notwithstanding any salary attached thereto, he shall be capable of being elected, and sitting and voting as a member of the Legislative Assembly; or such office may be held in connection with any other office held by a member of the Executive Council; and any of the powers and duties of the said office may be assigned for a limited period, or otherwise, to any other of the members of the Executive Council holding any other Departmental office, by name or otherwise. (R. S. O. c. 203, s. 2.)"

The Educational Institutions in Ontario are as follows:—

I. ELEMENTARY SCHOOLS.
1. KINDERGARTENS.
2. PUBLIC SCHOOLS, including Roman Catholic Separate Schools.

II. THE TRAINING OF TEACHERS.
1. COUNTY MODEL SCHOOLS.
2. PROVINCIAL NORMAL AND MODEL SCHOOLS.
3. HIGH SCHOOL TRAINING INSTITUTES.
4. COUNTY TEACHERS' INSTITUTES.
5. TEACHERS' READING COURSE.
6. ONTARIO TEACHERS' ASSOCIATION.

III. CLASSICAL SCHOOLS.
1. COUNTY HIGH SCHOOLS.
2. COLLEGIATE INSTITUTES.
3. UPPER CANADA COLLEGE.

IV. THE UNIVERSITY.
1. UNIVERSITY COLLEGE.
2. THE UNIVERSITY OF TORONTO.

V. TECHNICAL SCHOOLS.
1. SCHOOL OF PRACTICAL SCIENCE.
2. THE ONTARIO SCHOOL OF ART.
3. THE SCHOOL OF AGRICULTURE.

VI. *SCHOOLS FOR SPECIAL CLASSES.*
1. INSTITUTION FOR THE DEAF AND DUMB.
†2. INSTITUTION FOR THE BLIND.

VII. INSTITUTIONS PARTLY AIDED BY GOVERNMENT.

1. The Canadian Institute.
2. Institute Canadien.
3. Mechanics' Institutes.
4. Ontario Society of Artists.
5. Local Art Schools.
6. Literary and Scientific Society, Ottawa.
7. Hamilton Association.
8. The Entomological Society of Ontario.

VIII. UNIVERSITIES, COLLEGES, AND SCHOOL NOT UNDER PROVINCIAL CONTROL.

1. Universities:
   - Victoria, at Cobourg.
   - Queen's, at Kingston.
   - Trinity College, at Toronto.
   - Ottawa College.
   - Western, at London.
2. Theological Colleges:
   - Knox, at Toronto (Presbyterian).
   - Huron, at London (Church of England).
   - Wycliffe, at Toronto "
   - McMaster Hall, at Toronto (Baptist).
   - St. Michael's, at Toronto (Roman Catholic).
   - Assumption, at Sandwich "
3. Classical and Literary Colleges, etc.:
   - Albert College, at Belleville.
   - Woodstock College.
   - Trinity College School, at Port Hope.
   - St. Michael's (in part).
4. Ladies' Colleges:
   - Alexandra (department), at Belleville.
   - Alma, at St. Thomas.
   - Bishop Strachan School, at Toronto.
   - Ladies' College, at Brantford.
   - Hellmuth College, at London.
   - Wesleyan Ladies' College, at Hamilton.
   - Ontario " " Whitby.
   - The " " Ottawa.
   - Demill " " Oshawa.
   - Woodstock (department).
   - Loretto Abbey, Toronto.
   - " Convent, at Hamilton, Lindsay, and Niagara Falls.
   - St. Joseph's Academy, Toronto.
5. Medical Schools, etc.:
   - The College of Physicians and Surgeons of Ontario.
   - Toronto School of Medicine.
   - Trinity Medical School.
   - Royal College of Physicians and Surgeons.
   - College of Pharmacy.
   - School of Dentistry of the Royal College of Dental Surgeons.
   - Women's Medical Colleges, Kingston and Toronto.
   - Ontario Veterinary College.
6. Business Colleges:
   - At Belleville, 1; Brockville, 1; Chatham, 1; Guelph, 1; Hamilton, 2; Kingston, 1; London, 1; Peterboro', 1; Toronto, 2; Owen Sound, 1.

X. MISCELLANEOUS.

PRELIMINARY INFORMATION.

Before entering into details respecting the Elementary Schools under the direction of the Department of Education, a brief sketch is here given of the municipal system of Ontario, so far as it affects these schools; and also some particulars as to school officers, the examination and granting of certificates to teachers, and religious instruction in the schools, etc. This information is given under the following heads:—

1. The Municipal System as applied to the Schools.
2. Public School Trustees and their Duties.
3. Public School Inspectors and their Duties.
4. County Boards of Examiners and their Duties.
5. The Central Committee and its Functions.
6. Teachers' Examinations for Certificates.
7. Classes of Certificates to Teachers.
8. Religious Instruction in the Schools.
9. Miscellaneous.

I. Municipalities in their Relation to Schools.

The Province of Ontario possesses a system of municipal, or local, self-government which is uniform throughout the Province. While symmetrical in its arrangement, and thoroughly practical, it rests upon the free action of the ratepayers in each municipality. The organization comprises the (1) minor municipal corporations, consisting of townships, being rural districts of an area of eight or ten square miles, with a population of from three to six thousand; (2) villages with a population of over seven hundred and fifty; and (3) towns with a population of over two thousand. Such of these as are comprised within a larger district, termed a county, constitute (4) the county municipality, which is under the government of a council composed of the heads of the different minor municipalities in such counties as have already been constituted in the Province. (5) Cities are established from the growth of towns, when their population exceeds ten thousand, and their municipal jurisdiction is akin to that of counties and towns combined.

The functions of each municipality are commensurate with their respective localities. This municipal organization has been readily adapted to the requirements of a popular or national system of education.

The Rev. Dr. Ryerson, who, in February of the year 1876, retired from the office of Chief Superintendent of Education, after thirty-three years of able service and devotion in founding and developing the Ontario *system of* Public Instruction, thus describes the facilities *afforded to* educational progress by this municipal system, in *an address delivered* in the year 1851:

"It is in Upper Canada (now Ontario) alone that we have a complete and uniform system of municipal organization, from the smallest incorporated village to the largest city, and from the feeblest school section and remotest township to the largest county or union of counties—the one rising above the other, but not superseding it—the one merging into the other for purposes of wider expansion and more extensive combination. By their constitution, the municipal and school corporations are reflections of the sentiments and feelings of the people within their respective circles of jurisdiction, and their powers are adequate to meet all the economic exigencies of such municipality, whether of schools or roads, of the diffusion of knowledge, or the development of wealth."

2. School Trustees and their Duties.

In each minor municipality, such as a township, local School Corporations for the township, or for a section thereof, at the option of the ratepayers, are established, and these are managed by trustees elected by the ratepayers, who are liable for the support of the public schools in their respective localities and are practically the owners of them. The trustees appoint the teachers, who must possess the qualifications required by the Department. They arrange and pay the salary; purchase the school site (which may be acquired compulsorily); build the school-house, and estimate (within certain restrictions) for collection by the Township Council the rates for all funds which, in their judgment, are required for public school purposes. They are under obligation to provide adequate school accommodation, as defined by the Regulations of the Education Department, for two-thirds of the actual resident children of school age within the school division; to employ the required number of qualified teachers; to permit the children of all residents, between the ages of five and twenty-one, to attend school *free of charge*; they are bound to keep the schools open the whole year, except during vacations, and to send to the Inspectors and the Department the returns and reports required by the Law and Regulations. They are also empowered to dismiss refractory pupils; and, where practicable, to remove them to an Industrial School. They are required to visit from time to time the schools under their charge, to see that they are conducted according to law and that no unauthorized text-book is used.

Similar powers and obligations reside with the School Boards in cities, towns and villages. These Boards can raise the sums required for school purposes only by requisition, according to their own estimate, upon the Council of the Municipality, which is bound (under certain conditions) to levy, by rate, the amount required by the trustees. The Council of the County Municipality is entrusted with additional specific duties in respect of the townships, towns, and villages within the county, the most important being to levy by rate an amount equal to the Legislative grant for education, both amounts being solely devoted to the payment of teachers' salaries. The County Council also appoints one or more Inspectors *for each county*, who must possess the qualifications required by the *law and* General Regulations of the Department; pays one-half of *their salaries* and reasonable travelling expenses, the other half

being paid out of Provincial funds; and appoints two members of a County Board of Examiners for the professional examination of third-class (or lowest grade) teachers.

3. Inspectors and their Duties.

The County, City, and Town Councils, in appointing Inspectors, are limited to such teachers as possess certificates of eligibility, granted by the Department, and to two classes only, viz., (1) holders of First-class Provincial Certificates, Grade A; and (2) Graduates in Arts, with first-class honors, of any of the Universities in the Province, who furnish evidence of having taught successfully for five years, of which three at least must have been spent in a public school.

County Inspectors.—The County Inspector's duties are to inspect every school at least once in each term; to spend half a day in each school; to satisfy himself as to the progress made by the pupils from time to time; to examine into the methods of instruction pursued by the teacher; to teach a few model lessons himself; to ascertain the nature of the discipline exercised by the teacher; to examine the registers, also the apparatus, seats and desks, and all the internal and external equipments of the school-house; to report to the trustees in regard to such matters as require their attention; to give such advice as may be deemed necessary; to see that no unauthorized text-books are used in the school; to withhold the school grant in certain cases; to apportion the school grants according to the average school attendance of pupils; to decide complaints on certain conditions; to grant, on examination, temporary certificates; to suspend a certificate if necessary; to visit the County Model School at least twice in each term; and to report on the state of the schools to the Department, and generally to see that the Laws and Regulations are observed; make the apportionment of the Legislative and County Grants equivalent to each school; to act as Chairman of the Examining Board of his district; investigate, confirm, or set aside the rural school elections; to call meetings of ratepayers; decide disputes; to suspend teachers' certificates, for cause.

City and Town Inspectors.—The Inspector of every city or town shall, in addition, perform such other duties as may be imposed upon him by the local Board of School Trustees.

4. County Boards of Examiners and their Duties.

Each County Board of Examiners consists of the Examiners appointed by the County Council, and the Inspector or Inspectors of the county and the Inspectors of any city or town within the limits of the county, and two other Examiners. They must possess the qualifications prescribed by the Regulations, viz., they must have had three years' experience as teachers in a public or high school and hold a First-class Provincial Certificate, or a Degree in Arts from any chartered university in the Province of Ontario, or a



certificate as head master of a high school. Their functions are to examine candidates within their localities for Third-class Professional Certificates, at the close of each session of the County Model or Training Schools; to investigate all appeals against the action of any Inspector in their jurisdiction who suspends a teacher's certificate, and to exercise a general supervision over the County Model School.

5. The Central Committee and its Functions.

The Central Committee of Examiners is appointed by the Department, and consists of High, Public and Separate School Inspectors, two each, the Inspector of County Model Schools, the Director of Teachers' Institutes and a Chairman. Their chief functions are to prepare papers for the Professional and Non-Professional Examinations for each class of Public School Teachers' Certificates, and to peruse and value the answers of candidates for First-class Certificates. Sub-Examiners are appointed to aid in reading and reporting upon the answers for the Third and Second-class Non-Professional Examinations.

Instructions to the Examiners.—The Examiners are guided by the following instructions from the Department:—The questions in each subject are to be framed by the Examiners, not with reference to any high standard for competitive examination, but solely to show whether the pupil is qualified or not for the position, having regard to his proficiency or deficiency in answering questions framed for this purpose in the prescribed subjects. All Examiners should, therefore, be careful, when judging the answers, not to do so by such a standard as should govern in competitive examinations intended to test the respective merits of the different candidates for some special honor, but as a means of determining whether a fair average knowledge is possessed by the candidate.

6. Teachers' Examinations for Certificates.

There are two examinations for granting certificates: one held at the High Schools, for testing the literary attainments of the candidates, to be known as the Non-Professional Examination; the other, at a County Model School for Third-class Teachers; at a Provincial Normal School for Second-class Teachers; and at a Training Institute for First-class Teachers, to be known as the Professional Examination for each class respectively.

Third Class.—Candidates for a Third-class Non-Professional Teachers' Certificate will be examined in the following subjects as prescribed for Form I. of the High School Course of Study, viz.:—Nos. 1–10, 19, 20 and 21, with an option between 15, or 17, or 18, *and group* 12 and 14:—

1. READING (ORAL) AND PRINCIPLES OF.—A general knowledge of the principles of elocution; reading with proper expression, emphasis, inflection, and

2. ORTHOGRAPHY AND ORTHOEPY.—The pronunciation, the syllabication, and the spelling from dictation, of passages from any English author, and the spelling of all non-technical English words.

3. ENGLISH GRAMMAR.—Etymology and Syntax; exercises.

4. COMPOSITION.—The framing of sentences and paragraphs; familiar and business letters; paraphrasing; synonyms; correction of errors; themes based on the prose literature prescribed for this Form.

5. LITERATURE.—The critical reading of such works as may be prescribed by the Education Department from time to time.

6. HISTORY.—The leading events of Canadian and English History.

7. GEOGRAPHY.—Political, physical and mathematical Geography. Map Geography generally; Canada and the British Empire more particularly.

8. ARITHMETIC AND MENSURATION.—Arithmetic in theory and practice; areas of rectilinear figures, and volumes of right parallelopipeds and prisms; the circle, sphere, cylinder, and cone; Mental Arithmetic.

9. ALGEBRA.—Elementary rules: factoring; greatest common measure; least common multiple; fractions; simple equations of one, two, and three unknown quantities; simple problems.

10. EUCLID.—Book I., with easy problems.

19. WRITING.—Neatness, legibility.

20. BOOK-KEEPING.—Single and double entry; commercial forms; general business transactions.

21. DRAWING.—Freehand; practical Geometry; perspective; industrial designs.

OPTIONS.—The options between Nos. 15, or 17, or 18, and group 12 and 14, are as follows, viz.:—

15. LATIN.—The Elementary Latin Book, grammar, composition, and the texts prescribed from time to time by the Education Department.

17. FRENCH.—The Elementary French Book, grammar, composition, and the texts prescribed from time to time by the Education Department.

18. GERMAN.—The Elementary German Book, grammar, composition, and the texts prescribed from time to time by the Education Department.

12. PHYSICS.—The elements of Physics, as treated in Huxley's Introductory Science Primer and Balfour Stewart's Science Primer.

14. BOTANY.—The elements of structural Botany. Outlines of classification; examination and classification of common plants belonging to the following natural orders:—Ranunculaceæ, Cruciferæ, Mulvaceæ, Leguminosæ, Rosaceæ, Sapindaceæ, Umbelliferæ, Compositæ, Labiatæ, Coniferæ, Araceæ, Liliaceæ, Triliaceæ, Iradaceæ, Gramineæ; the characters and general properties of these orders.

Second Class.—Candidates for a Second-class Non-Professional Teachers' Certificate are examined in the following subjects as prescribed for Form II. of the High School Course of Study, excepting Ancient History and Geography, viz.:—Nos. 1–10, 13, 21, with an option between 15, or 17, or 18, group 12 and 14, and group 19, 20, and 23. Candidates who do not take the commercial option for Second-class, shall pass the Third-class Non-Professional Examination in Nos. 19 and 20.

1. READING.—Course for Form I. continued.

2. ORTHOGRAPHY AND ORTHOEPY.—Course for Form I. continued.

3. *ENGLISH GRAMMAR.*—Course for Form I. continued. (As prescribed *for the Pass Matriculation* Examination of the University of Toronto.)

4. *COMPOSITION.*—Course for Form I. continued.

5. LITERATURE.—The critical study of the texts prescribed from time to time for the Pass Matriculation Examination of the University of Toronto.

6. ENGLISH HISTORY (including Colonial History).—From William III. to George III. inclusive. Roman history from the commencement of the Second Punic War to the death of Augustus. Greek history from the Persian to the Peloponnesian Wars, both inclusive (University Pass).

7. GEOGRAPHY. — Modern: North America and Europe. Ancient: Greece, Italy and Asia Minor.

8. ARITHMETIC.—Course for Form I. continued (University Pass).

9. ALGEBRA.—To the end of Quadratics (University Pass).

10. GEOMETRY.—Euclid, Books I., II., III.; easy deductions (University Pass).

13. CHEMISTRY.—Reynolds' Experimental Chemistry (chaps. I. to XVI. inclusive).

21. DRAWING.—Course for Form I. continued.

OPTIONS.—The options between Nos. 15, or 17, or 18, groups 12 and 14, and groups 19, 20 and 23, are as follows, viz.:—

15. LATIN.—Examination subjects as prescribed, from time to time, for Pass Matriculation into the University of Toronto.

17. FRENCH.—Examination subjects as prescribed, from time to time, for Pass Matriculation into the University of Toronto.

18. GERMAN.—Examination subjects as prescribed, from time to time, for Pass Matriculation into the University of Toronto.

12. PHYSICS.—Definitions of velocity, acceleration, mass, momentum, force, moment, couple, energy, work, centre of inertia, statement of Newton's Laws of Motion, composition and resolution of forces, condition for equilibrium of forces in one plane, definition of a fluid, fluid pressure at a point, transmission of fluid pressure, resultant fluid pressure, specific gravity, Boyle's Law, the barometer, air-pump, water-pump, siphon (University Pass).

14. BOTANY.—Course in Form I. continued.

19. WRITING.—Course for Form I. continued.

20. BOOK-KEEPING AND COMMERCIAL TRANSACTIONS.—Course for Form I. continued.

23. Precis-writing and Indexing.

Local Examinations.—The Non-Professional Examinations for Teachers' Certificates of the Second and Third Classes, and the "Entrance to High School" Examinations, may, with the sanction of the Minister, be held at other centres than the High Schools.

First Class.—Candidates for a First-class Non-Professional Certificate, Grade C, are examined in the following subjects, as prescribed for Form III. of the High School Course, viz.:—Nos. 3, 4, 5, 6, 7, 9, 10, 11, 13 and 14 of Form III., and also 12 of Form II. At the examination in Botany, candidates are expected to describe and classify a submitted specimen of a Canadian flowering plant. Only such candidates as pass the Second-class Non-Professional Examination are eligible to write for First "C," but both examinations may be taken the same year.

3. ENGLISH GRAMMAR.—Course in Form II. continued.

4. COMPOSITION.—Course in Form II. continued.

5. LITERATURE.—The critical study of the texts prescribed, from time to time, for Honor Matriculation into the University, Toronto.



6. HISTORY.—English history under the Houses of Tudor and Stuart. (Honor Matriculation, University.)

7. GEOGRAPHY.—The British Empire, including the Colonies. (Honor Matriculation, University.)

9. ALGEBRA.—To the end of Binomial Theorem. (Honor Matriculation, University.)

10. GEOMETRY.—Euclid, Books I. to IV. inclusive, Book VI., and definition of Book V. (Honor Matriculation, University.)

11. TRIGONOMETRY.—(Honor Matriculation, University). The solution of Triangles.

13. CHEMISTRY.—Reynolds' Experimental Chemistry, chaps. I. to XXVI. inclusive. (The University Matriculation Examination.)

14. BOTANY.—The structure and classification of Canadian flowering plants. (The University Matriculation Examination.)

NOTE.—For No. 12 of Form II. see preceding page.

Non-Professional Examinations for First-class Certificates, Grade A or B, are limited as follows:—

DEPARTMENT OF ENGLISH.

COMPOSITION.—History and Etymology of the English Language, Rhetorical Forms, Prosody. *Books of Reference*—Earle's Philology of the English Tongue, Abbot and Seeley's English for English People, Bain's Composition and Rhetoric, or Hill's Rhetoric, Marsh's English Language and Literature, Lectures VI. to XI. inclusive.

LITERATURE:

1. History of English Literature, from Chaucer to the end of the reign of James I. *Books of Reference*—Craik's History of the English Literature and Language, or Arnold's Literature, English Edition; Marsh's English Language and Literature, Lectures VI. to XI. inclusive.

2. Specified works of standard authors, as prescribed from time to time by the Department.

HISTORY:

Greece.—The Persian to the Peloponnesian War inclusive, Cox's History of Greece (unabridged).

Rome.—From the beginning of the Second Punic War to the death of Julius Cæsar, Mommsen's History of Rome.

England.—The Tudor and Stuart Periods, as presented in Green's Short History of the English People, Macaulay's History of England (or Franck Bright's History of England, Second Volume), and Hallam's Constitutional History.

Canada.—Parkman's Old Regime in Canada and Wolfe and Montcalm.

GEOGRAPHY.—So much Ancient Geography as is necessary for the proper understanding of the portions of the Histories of Greece and Rome prescribed.

DEPARTMENT OF MATHEMATICS.

ALGEBRA.—Symmetry, Binomial Theorem, Multinomial Theorem, Exponential and Logarithmic Series, Interest and Annuities, Indeterminate Coefficients, Partial Fractions, Series (Convergency and Divergency, Reversion, Summation), Inequalities, Determinants as far as in Gross, Reduction and Resolution of Equations of first four Degrees and of Binomial Equations, Relations between Roots and Coefficients of Equations, Indeterminate Equations, Problems.

ANALYTICAL PLANE GEOMETRY.—The Point (including Transformation of *Co-ordinates), the Right Line*, the Circle, the Parabola, the Ellipse, the Hyperbola, *the General Equation* of the Second Degree, Abridged Notation.

TRIGONOMETRY.—Trigonometrical Equations, Solution of Triangles, Measurement of Heights and Distances; Inscribed, Circumscribed and Escribed Circles of a Triangle; Quadrilaterals, Description of Vernier and Theodolite, Trigonometrical and Logarithmic Tables, Demoivre's Theorem.

STATICS.—Equilibrium of Forces acting in one plane; Parallelogram of Forces, Parallel Forces, Moments, Couples, Centre of Gravity, Virtual Work, Machines, Friction, Experimental Verifications.

DYNAMICS.—Measurement of Velocities and of Acceleration, Laws of Motion, Energy, Momentum, Uniform and Uniformly Accelerated Motion, Falling Bodies, Moments of Inertia, Uniform Circular Motion, Projectiles in Vacuo, Collisions, Simple Pendulum, Experimental Verifications.

ELEMENTARY GEOMETRICAL OPTICS.—Reflection and Refraction of Light at Plane and Spherical Surfaces, including Prisms and Lenses (aberration not considered); the Eye; Construction and Use of the more simple Instruments.

Candidates for a Departmental Certificate, Grade A or B, taking the Departmental Examinations, are not eligible to write for this grade until they have first passed the Non-Professional Examination required for Grade C, but nothing herein contained shall prevent a candidate from writing at both examinations the same year. A candidate for Grade A or B is allowed an option between English and Mathematics.

7. Teachers' Certificates.

Classes of Certificates.—The conditions under which Public School Teachers' Certificates may be granted are prescribed by the Department. The certificates issued are—First-class, Grades A, B and C; Second-class and Third-class. First and Second-class Certificates are valid throughout the Province, and are held during good behaviour, while the Third-class are limited to a period of three years. The holder, however, may, on passing the Departmental Examination, obtain a renewal of the same for three years, subject to attendance at a County Model School. There can be no renewal without re-examination. In an emergency the Minister of Education has power to extend the duration of a certificate.

Third Class—Conditions.—The conditions upon which County Boards of Examiners can grant Third-class Certificates are: that (1) the candidates must furnish satisfactory proof of good moral character; (2) must be of the age of eighteen years, if males, and seventeen years, if females; (3) must have passed the prescribed non-professional examinations; and (4) must subsequently have attended for one term at the County Model School, and have obtained from its Principal, and the County Board of Examiners a certificate of qualification, after having passed the professional examination.

Second Class.—All candidates for Second-class Certificates are obliged to attend one of the Provincial Normal Schools, so as to prepare for the professional examination.

These Certificates are granted upon certain conditions only: (1) that the candidate must have passed the non-professional examination in literature and science; (2) must have taught successfully



for at least one year in a Public School in the Province; and (3) must have attended, for one session, a Provincial Normal School, and have obtained from the Principal of such school and from the Examiners appointed by the Minister of Education a certificate of his fitness to teach on a Second-class Certificate. In addition to the examination above referred to, the candidates are examined in the following subjects, which constitute the professional examination for that class: Principles and Theory of Education; School Organization; Discipline and Government; English Literature and Language; Mental Arithmetic; Reading and Elocution; Practical Chemistry; Hygiene; Physics; Practical Botany; Zoology; Music and Drawing; Drill (males only) and Calisthenics; Methods of Teaching and Practical Teaching in the Model School.

First Class.—First-class Certificates are granted only upon the following conditions: that the candidate (1) must be the holder of a First-class Non-Professional Certificate; (2) must have passed the professional examination for a Second-class Certificate; and (3) must have attended a Training Institute for one session, and passed the prescribed examination thereat.

Should any teacher with requisites 1 and 2 have taught for two years in a Public or a High School, he need not attend the Institute, but must pass the examination.

8. Religious Instruction in the Schools of Ontario.

1. Every Public and High School shall be opened with the Lord's Prayer, and closed with the reading of the Scriptures and the Lord's Prayer, or the prayer sanctioned by the Department of Education.

2. The portions of Scripture used shall be taken from selections authorized for that purpose by the Department of Education, and shall be read without comment or explanation.

3. Where a teacher claims to have conscientious scruples against opening and closing the school as herein provided, he shall notify the Trustees to that effect in writing.

4. No pupil shall be required to take part in the exercises above referred to against the wish of his parent or guardian, expressed in writing to the master of the school.

5. When required by the Trustees, the Ten Commandments shall be repeated at least once a week.

6. The Trustees shall place a copy of the authorized Readings in each department of the Public and High Schools under their jurisdiction, within one year from the date hereof.

7. The clergy of any denomination, or their authorized representatives, shall have the right to give religious instruction to the pupils of their own Church in each school-house at least once a week, after the hour of closing of the school in the afternoon; and if the clergy of *more than* one denomination apply to give religious *instruction in the same* school-house, the School Board or Trustees *shall decide on what* day of the week the school-house shall be

the disposal of the clergyman of each denomination, at the time above stated. But it shall be lawful for the School Board or Trustees and clergyman of any denomination to agree upon any hour of the day at which a clergyman, or his authorized representative, may give religious instruction to the pupils of his own Church, provided it be not during the regular hours of the school.*

9. Miscellaneous.

In addition to the foregoing, provision has been made for granting aid to public schools in new and poor townships; for the course of study and inspection of Indian schools, and for administering the Superannuated Inspectors' and Teachers' Fund. Regulations have also been made in regard to school libraries, and a series of text-books for high and public schools have been prescribed.

I. ELEMENTARY SCHOOLS.

1. Kindergartens.

In the year 1882, the Hon. Adam Crooks, Minister of Education, at the request of the Public School Board of Education of the City of Toronto, and as the result of a visit made by a delegation from that Board to the City of St. Louis (Missouri, U. S.), invited two prominent Kindergarteners—Miss Blow and Mrs. Hubbard—to visit the City of Toronto and deliver a course of lectures, with illustrations of Kindergarten Gymnastics and Work, before the students of the Normal School and the city teachers. The impression made was so favorable that a lady teacher, who had for some time been conducting a Kindergarten in the city, was selected by the Board to proceed to St. Louis and perfect herself in the work of a Kindergarten. On her return she was appointed to the double position of Lecturer in the Normal School and Instructor to the city teachers in the Kindergarten work. The result of her labors is that the Kindergarten has been introduced into Toronto, Hamilton, and Berlin in connection with the Public School system. The same teacher now conducts a Training School for Kindergarteners in connection with the Public Schools of Toronto, and *all* primary teachers receive the training. Besides the Kindergartens attached to certain of the Public Schools, the Board of Education conduct a Charity Kindergarten for the children of poor women, who have to go out to daily service.

Each of the Provincial Normal and Model Schools at Toronto and Ottawa has a Kindergartener on the staff of teachers, who has

* The Regulations prescribing the "Hours of Daily Teaching" provide that *they shall not* exceed six hours in duration, but "a less number of hours of daily *teaching may* be determined upon in any Public School, at the option of the *Trustees.*" Arrangement may, therefore, be made by the Trustees for closing the *ordinary school* work earlier than the usual hour, on certain days, so that time may *be given for* religious instruction.

supervision of the Kindergarten attached to the Model Schools, and also instructs the teachers-in-training in that branch of their profession.

2. Public Schools—Explanatory Statement.

Each city, town, township and village has, as has been observed, its own municipal council; and each city, town, village and rural school section has its own independent board of school trustees, which is by law invested with extensive corporate powers. One is supreme in civic affairs, while the other is no less so in all matters pertaining to the schools.

Each township is divided by its municipal council into school sections of from two to four square miles each. Three trustees are elected by the ratepayers as a school corporation for each section. These trustees hold office for three years—one going out of office annually, when his successor is elected.

Grants.—Two hundred and forty thousand dollars ($240,000) are annually granted by the Legislature, and apportioned by the Minister of Education amongst the municipalities. They are required to raise, by rate, a sum at least equal to that apportioned to them. These two sums constitute the primary school fund of the municipality. On the requisition of the board of trustees, the municipal corporation imposes the additional rates which are necessary for the support of the schools.

A sum of about twenty thousand dollars ($20,000) is granted annually in aid of schools in new and sparsely scattered townships. This money is apportioned by the Department, and is in addition to the share coming to these poor schools from school fund of the municipality and the local rates raised on the requisition of trustees.

Separate Schools.—The term "Separate Schools" applies to Protestant and colored persons as well as to Roman Catholics; but this exception to the general Public School system is confined chiefly to Roman Catholics who desire to establish Separate Schools in localities where their supporters are sufficiently numerous to support one. The principle of these schools is, that any Roman Catholic ratepayer may elect to support a Separate School, and upon giving the prescribed notice he is exempted from the Public School rates. These schools are governed by trustees who are elected by the supporters of such schools, and are a corporation with powers similar to those of other school trustees. The teachers are required to possess proper certificates of qualification, and the schools share in the Legislative Grant in proportion to the attendance, and they are also subject to inspection by the Education Department: two Inspectors having been appointed for that purpose. In case of any disagreement between the Separate or Public School Corporations and the municipal bodies, such dispute is subject *to the arbitrament of the* Minister of Education, with the right of *appeal to the Lieutenant*-Governor in Council.

PROGRAMME.—The Programme of Studies prescribed for Public Schools is as follows:—

SUBJECT.	1ST CLASS.	2ND CLASS.	3RD CLASS.	4TH CLASS
READING AND LITERATURE—	Tablet Lesson and First Reader.	Second Reader.	Third Reader.	Fourth Reader.
SPELLING, ORTHOGRAPHY AND ORTHOEPY—	Spelling from reading lessons, on slates and orally.	Spelling from reading lessons, on slates and orally.	Spelling with verbal distinctions, on copies and orally.	Systematic orthography and orthoëpy.
WRITING—	Writing on slates and paper.	Writing on slates and paper.	Copy writing. Business forms.	Business forms and accounts.
ARITHMETIC—	Numeration and notation to 1,000; addition and subtraction; mental arithmetic.	Numeration and notation to 1,000,000; multiplication and division; mental arithmetic.	Greatest common measure and least common multiple. Elementary reduction. Compound rules. Mental arithmetic.	Vulgar and decimal fractions. Elementary percentage and interest. Mental arithmetic.
DRAWING—	The drawing exercises in parts I. and II. First Reader.	Drawing-book No. 1, authorized series.	Drawing-books Nos. 2 and 3.	Drawing-books Nos. 4 and 5.
GEOGRAPHY—	Conversations concerning the earth.	Local geography and elementary definitions. Map of the world.	Definitions. Simple map geography, N. American and Ontario. Map drawing.	Geography of the Continents, Canada and Ontario. Map drawing.
MUSIC—	Rote Singing.	Rote singing. Elements of Musical Notation.	Simple songs. Elementary ideas of written music.	Song singing. Sacred music. Musical notation.
GRAMMAR AND COMPOSITION—	Oral exercises in language.	Oral and written exercises in language.	Classes of words and their inflections. Simple descriptive writing.	Elements of formal Grammar and Composition.
HISTORY—			History, English and Canadian.	Leading features of English and Canadian History.
OBJECT LESSONS—	Form, size, color, weight, common objects (parts and qualities).	Subjects of Class I. continued.	Common objects (source, manufacture, uses, etc.) Animals, birds, plants.	

TEMPERANCE, HYGIENE, DRILL (with Calisthenics for Girls), AND MORAL CULTURE.

EXPLANATORY REMARKS ON THE PROGRAMME.

The programme of studies herein prescribed shall be followed by the teacher as far as the circumstances of his school permit. Any modifications deemed necessary should be made only with the concurrence of the Inspector and the Trustees. In French and German Schools the authorized Readers shall be used in addition to any text-books in either of the languages aforesaid.

[NOTE.—General directions then follow on the teaching of the several subjects mentioned in the foregoing programme. In regard to the Fifth Class the regulations say]:—

Fifth Class.—The programme for the Fifth Class embraces the following subjects:—Reading, Literature, Orthography and Orthoëpy, Writing, Arithmetic, Drawing, Geography, Grammar, Composition, History, Music, Bookkeeping, Algebra, Euclid, Physics, Botany, Hygiene, Drill, Calisthenics, Moral and Religious Instruction. The course of study under each head is the same as that prescribed for Third-class Teachers. Trustees are recommended not to form a Fifth Class in the Public School in any city, town, or incorporated village where a High School is situated.

GENERAL DIRECTIONS AS TO TEACHING OTHER SUBJECTS.

HYGIENE.—This subject should be taught in the form of familiar lectures, and should include—temperance; the nature and effects of alcohol upon the system; the importance of cleanliness, and a strict observance of the laws of health; dietetics; how to preserve the eyesight, teeth, etc.; the dangers of exposure to cold and damp; how to play in order to promote physical culture; etc. At least one hour a week should be devoted to this subject.

DRILL AND CALISTHENICS.—The different extension movements prescribed in any text-book on the subject should be frequently practised, not only during recess, but during school hours. Accuracy and promptness should characterize every movement. In addition, the boys should be formed into companies and taught the usual squad and company drill, and the girls should be exercised in calisthenics.

MORAL AND RELIGIOUS INSTRUCTION.—No course of moral instruction is prescribed. The teacher is expected, however, by his personal example, as well as by the exercise of his authority and by instruction, to imbue every pupil with respect for those moral obligations which underlie a well-formed character. Respect for those in authority and for the aged, courtesy, true manliness, reverence, truthfulness, honesty, etc., can best be inculcated as the occasion arises for referring to them. The religious exercises of the school should be conducted without haste, and with the utmost reverence and decorum.

REVIEWS AND RECITATIONS.—Every Friday forenoon should be devoted to a review of the week's work, and the afternoon to exercises tending to relieve the usual routine of the school-room, while promoting the mental and moral culture of the pupils. The teacher should encourage the pupils to prepare dialogues, readings, recitations and songs for the Friday afternoon school-sessions. He should also choose some topic for a familiar lecture, or read some literary selection, making such comments as are likely to promote a love of reading, and quicken the interest of the scholars in the work of the school. The girls should receive suitable instructions in plain sewing.

AGRICULTURE.—*In* rural schools the subject of agriculture should occupy *a prominent place, such* points being considered as—the nature of the soil, *how plants grow and what* they feed upon; how farms are beautified and cult

vated; the value of shade trees; what trees to plant, and when to plant them; the relation of agriculture to other pursuits; the effect of climate on the pursuits of a people. Poetical selections on rural pursuits, talks on botany and natural history, should form part of the instruction of every Friday afternoon.

PUBLIC SCHOOL STATISTICS FOR 1884.

With a view to understand the condition of the Public Schools of Ontario for the year 1884, the following statistics are inserted in this place:—

1. *Pupils.*—The number of pupils, according to age, attending the Public Schools, was as follows: Pupils under 5 years of age, 1,115; from 5 to 21, 465,374; over 21, 428; the number between the age of 7 and 13 reported as not attending school was 6,230. The average daily attendance, divided by the legal teaching days of the year, was 221,861, or 48 per cent.

2. *Classes.*—The number in the different classes was as follows:

1st Class.	2nd Class.	3rd Class.	4th Class.	5th Class.	6th Class.
167,722	106,017	112,873	70,713	8,698	894

Note.—The circumstances of Public Schools situate in the Cities and Towns, and those in rural districts, differ in this, that in the latter there are two classes of pupils: the elder, who chiefly attend during the winter months, and the younger, in the warmer seasons. The average attendance accordingly shows this contrast:

Attendants in Cities	60	per cent.
" " Towns	56	"
" " Rural Districts	44	"

The number of Teachers was 7,085; 2,789 being Males, and 4,296 Females.

3. *Teachers' Qualifications.*—The following were the qualifications of the different Teachers in the year 1884:—

Provincial First-class	235
" Second-class	2,237
Old County Board First-class Certificates	168
" " Second-class "	118
" " Third-class "	3,420
Temporary Certificates	623
Other "	284

4. *Salaries.*—The following table gives the average Salaries of the Teachers in Counties, Towns, and Cities respectively:—

	Males.	Females.
Counties	$404	$264
Towns	612	283
Cities	791	364

The R. C. Separate Schools are included in the preceding statement. The number of these schools is 207, and of pupils attending them 27,463.

5. *Historical Statistical Retrospect.*—With a view to give a bird's-eye view of the gratifying progress which has been made in the Public Schools of Ontario during the five last decades, the following table has been prepared:—

STATISTICS of the PUBLIC SCHOOLS and ROMAN CATHOLIC SEPARATE SCHOOLS of Ontario for the last forty years.

——	1844.	1854.	1864.	1874.	1884.
Population of Ontario	506,055 (1842)	950,551 (1850)	1,396,091 (1860)	1,620,851 (1870)	1,913,460 (1880)
Number of Schools	2,610	3,244	4,225	4,758	5,316
School Population between the ages of 5 and 16...	183,539	277,922	424,565	511,603	471,287
Number of Pupils attending School	96,756	204,168	371,695	464,047	466,917
Number of Public School Teachers.....	....	3,539	4,625	5,736	7,085
Male	....	2,508	3,011	2,601	2,789
Female	....	1,031	1,614	3,135	4,296
Am't of Legislative Grant.	$80,000	$90,690	$177,053	$267,772	$267,084
Am't of Municipal School Grant and Assessments.	$66,890	$483,523	$1,023,400	$2,214,976	$2,675,721
Trustees' Rate Bills, and Other Receipts	$89,339	$252,339	$283,734	$756,523	$1,047,417
T'l Income from all sources	$236,229	$826,552	$1,484,187	$3,239,271	$3,990,222
Paid Teachers' Salaries...	$206,856	$578,868	$996,956	$1,647,750	$2,296,027
Paid for Sites, Buildings and Repairs	....	$115,311	$153,059	$853,584	$967,102
Other Expenditures.....	....	$88,312	$135,303	$363,998	$17,733
Total Expenditure.....	....	$782,491	$1,285,318	$2,865,332	$3,280,862
No. of School-houses reported (Wood..	....	2,802	3,351	3,195	2,954
No. of School-houses reported (Stone or Brick	....	337	895	1,632	2,390

II. THE TRAINING OF TEACHERS.

The following is a brief description of the means under the control of the Education Department of Ontario for preparing young men and women in the Province for the teaching profession. They are:—

1. The County Model Schools.
2. The Provincial Normal and Model Schools.
3. The Training Institutes.
4. Teachers' Institutes.
5. *Teachers'* Reading Course.
6. *Ontario* Teachers' Association.

I. County Model Schools.

The establishment of this very valuable portion of the Educational System of the Province dates as far back as the year 1843. By referring to the first School Act for Upper Canada, passed in that year, we find that the 57th Section declares:—

"That it shall and may be lawful for the Court of Wardens of any County in Upper Canada . . . to raise and levy by county rate a sum not exceeding £200 ($800), and to appropriate and expend the same for the maintenance of one or more "County Model Schools," within such County, and to constitute, by by-law or by-laws, to that effect, any Township, Town, or City School or Schools within the County, to be for any term not less than one year, such County Model School or Schools, etc."

The 66th Section of the same Act declares:—

"That in every such Township, Town, or City Model School, gratuitous instruction shall be given to teachers of Common Schools." . . .

The School Act of 1846 provided for the establishment of District Model Schools in which "instruction shall be afforded to all teachers of Common Schools within the District." They were thus Normal Schools in miniature, for the persons under instruction were already teachers. The "Educational Reports" of those years contain reports from School Superintendents who speak highly of the system.

In 1850, when the whole machinery of the School System was revised and reorganized, the Act provided for the establishment and maintenance of Township Model Schools in place of County ones.

The chief reason why such schools did not prove a success at that early period of our educational history was the lack of "model teachers," as well as "model school-houses."

As the status and qualifications of the Superintendents, who were subsequently styled Inspectors, as organizers and practical judges of scholastic efficiency, improved, so did the schools. At last the time came when the Model School System could be once again put into operation, and so in the year 1877 the School Act directed, that at least one school in each County shall be set apart by the County Board of Examiners, as a County Model School for the training of candidates for Third-class Teachers' Certificates. The County Council is required to provide and levy for each such Model School within the County, an amount at least equal to that apportioned or paid by the Education Department out of the Annual Legislative Grant; but in no case must it be less than one hundred and fifty dollars.

Conditions on which Model Schools are Established.—1. The Principal must hold a First-class Provincial Certificate, and have at least three (3) years' experience as a Public School Teacher.

2. There must be at least three (3) assistants holding Second-class Certificates.

3. The equipment must be equal to that required for the Fourth Class of a Public School.

4. A separate room for Model School purposes must be provided.

5. An assistant must be employed to relieve the Principal of his Public School work at least half the day, while the Model School is in session.

COURSE OF STUDY.

The course of study embraces the following:—

I. PRINCIPLES OF EDUCATION.—School organization, management, discipline, methods of instruction, and practice in teaching.

(1) METHODS OF INSTRUCTION.—The best methods of teaching the various subjects prescribed for the first four classes in the Public Schools, especial attention being given to the best methods of giving the *first lessons* in these subjects.

(2) OBSERVATION AND REPORTING.—I. (*a*) Observation of methods illustrated in the Principal's model lessons; (*b*) observation—under the Principal's supervision, when possible—of methods illustrated by the assistant Model School Teachers. II. Reporting to the Principal the results of their observations, especially as to the (*a*) object of the lessons observed; (*b*) steps by which this object was attained.

(3) PRACTICE IN TEACHING.—After proper instruction and examples in Methods, each Teacher-in-training shall have practice in applying the methods exemplified (*a*) by using his fellow-students as a class; (*b*) by teaching a class of pupils—say ten or twelve—before the Principal or some other competent critic; (*c*) by teaching in the several divisions of the school. No Teacher-in-training shall be required to practise the actual teaching of any subject as in (*a*) till the best method of presenting it has been explained and actually exemplified. Practice in (*a*) precedes practice in (*b*), and practice in (*b*) precedes practice in (*c*).

II. PHYSIOLOGY AND HYGIENE.—(*a*) Laws of health, temperance, cleanliness, hours for study, rest, recreation, and sleep. (*b*) Heating and ventilation of the school-room. (*c*) Functions of the brain, eye, stomach, heart and lungs.

III. MUSIC, DRAWING AND CALISTHENICS.

IV. SCHOOL LAW.—A knowledge of school law, so far as it relates to the duties of teachers and pupils.

V. REVIEW OF NON-PROFESSIONAL WORK.—A review of the principal subjects in the Public School curriculum, such as Composition, Grammar, Arithmetic, and Literature.

FINAL EXAMINATION.—At the end of each Session there is an Examination in these subjects on papers prepared by the Department, as well as in Practical Teaching. This Examination, conducted by the County Board of Examiners, constitutes the Professional Examination for Third Class Teachers.

SYLLABUS OF LECTURES.—A practical and comprehensive Syllabus of Lectures for the Schools was drawn up by the present Minister of Education, Hon. G. W. Ross, in 1878, who was at that time Public School Inspector for the County of Middlesex. It still forms the basis of the instruction given in these institutions.

INSPECTION.—The County Model Schools are periodically inspected at least once during the Session, by the official appointed for that purpose by the Education Department.

Statistics.—There are at present fifty-two of these Schools. Their condition can be best understood from the following condense statistics:—

Number of Student Teachers on Roll.....	1,305
Males.....	520
Females.....	785
Increase over last year	234
Number who withdrew during the term....	21
Number who passed Final Examination....	1,203
Males.....	467
Females.....	736
Number that failed.....	81
Number of Lectures on Education.....	1,467
" " School Law	509
" " Hygiene	936
" Lessons taught by each Student..	1,559
" Departments used	340
" Assistants with the required qualifications.....	253

2. The Provincial Normal and Model Schools.

Object.—These Schools, situated at Toronto and Ottawa, are intended as Training and Practice Schools for Candidates for SECOND-CLASS CERTIFICATES.

Establishment.—The establishment of a Normal School for the Training of Teachers as a part of a Provincial System of Education, engaged attention in Upper Canada (now Ontario) in 1836. Nothing definite, however, was done until the year 1846, when, in compliance with the recommendation of the Rev. Dr. Ryerson, Chief Superintendent of Education, in his Report already referred to (page 6) the Legislature appropriated funds for furnishing suitable buildings, and an annual grant for the support of a Normal School, under the management of a Board of Education and the Chief Superintendent. As the seat of Government was at this time in Montreal, the Government House at Toronto was placed at the disposal of the educational authorities. Here the School was opened on November 1, 1847. The removal of the seat of Government to Toronto, in 1849, necessitated another change of premises, and the adoption of measures for the immediate erection of the necessary permanent buildings. The requisite money having been voted by the Legislature, the corner-stone was laid July 2, 1851, by His Excellency the Earl of Elgin and Kincardine, Governor-General; and in the month of November in the following year the Normal and Model Schools were opened in the buildings which now ornament St. James' Square, and which are described in one of the provincial papers of that date as being "elegant in architectural appearance, commodious in their accommodations, and healthy in their situation." In the year 1858 the Normal School was transferred to the present building and the old apartments applied to the purposes of an Educational Museum and a projected School of Art and Design, which is now the Ontario School of Art.

Granting of Certificates.—From the time that the Toronto Normal School was established until the year 1871, all the Normal School Certificates for Teachers in the Province were granted by the Chief Superintendent of Education, upon Examination by the Teaching Staff of the Institute. During that time 3,150 Teachers received Certificates.

Since the year 1871 several changes have been made in the character of the work done in the Normal Schools, and in the Examinations for Certificates. Under the present system the work is in a large degree professional. Only those candidates who have passed the non-professional, or literary, examination, at the different High Schools of the Province, are entitled to enter the Normal Schools.

Sessions.—There are two sessions in each year, and the average attendance at each School is 100 for each session.

Course of Studies.—I. Education: 1. History of Education; 2. Science of Education; 3. Principles and Practice of Teaching; 4. School Organization and School Management. II. English Language and Literature: 1. English Literature. Critical reading of a play of Shakespeare, or the work of some other standard author. 2. Practical English. III. Hygiene. IV. Chemistry. V. Physics: 1. Heat; 2. Light; 3. Electricity. VI. Botany. VII. Zoology. VIII. Drawing. IX. Vocal Music. X. Calisthenics. XI. Military Drill. XII. Method: How to teach the different subjects on the programme for Public Schools. XIII. Practice in Model Schools. EXAMINATION. At the close of each session one of the High School Inspectors, and associates named by the Department, conduct the PROFESSIONAL EXAMINATION, which is based on the Course of Studies given above, and on practical teaching in the Model Schools.

The Normal School at Ottawa was opened in 1875, and the Model School in the year 1880. Before the erection of a separate building for the Model School, one of the City Public Schools was used as a school of practice for the Normal School Students. The Course of Study is precisely the same in both Schools.

The Model Schools.—These are adjuncts to the Normal Schools and are used as Practice Schools for the Teachers-in-training. The Course of Study is in harmony with that of the Public Schools. After the Students in the Normal Schools have observed the methods employed in the Model Schools, and have, in the presence of the Masters, handled classes formed amongst themselves, they are detailed to perform similar work in the Model Schools under the immediate direction and criticism of the regular Teachers. From the Reports emanating from the Head Teachers of these schools, and from those of their assistants in the Normal Schools, the *Principals of the* Normal Schools frame their Report as to the *candidate's qualifications* to receive a permanent Certificate of the *Second Class.*

Statistics.—The following Statistics are for the year 1886:—

Name of School.	When Established.	Number of Teachers.	Number of Students.		Number of Pupils.	
			Males.	Females.	Boys.	Girls.
Toronto Normal School....	1847	5	84	157	..	..
Ottawa Normal School	1875	6	68	99	..	..
Toronto Model School	1847	9	..	..	150	156
Ottawa Model School.....	1880	9	..	..	172	180

The total number of Students admitted to the Toronto Normal School since its establishment in 1847 was 9,667; of these 4,901 received Certificates. The number of Students admitted to the Ottawa Normal School since its establishment in 1875 was 1,364; of these 763 received Certificates.

3. Training Institutes.

These Institutes, intended for the training of Assistant Masters of High Schools, and of First-class Teachers for Public Schools, are attached to certain Collegiate Institutes, which have as Assistant Masters specialists in Modern Languages, Mathematics, Classics, and Science, and, in addition to these, teachers competent to give instruction in Music, Drawing, Drill, and Calisthenics.

Sessions.—In each year there is one session of fourteen weeks. The first seven are devoted to the work of each department, the other seven are spent in observation of methods, practice, and examination.

COURSE OF STUDY AND TRAINING.

The Course of Study and Training followed in each Training Institute is as follows:—

(*a*) The History of Education.

(*b*) The Science of Education.

(*c*) The Principles and Practice of Teaching, with especial reference to High School Work.

(*d*) The Organization and Management of Schools, with especial reference to the different grades of High Schools.

(*e*) Systematic observation of the mode of conducting a High School.

(*f*) Practice in managing classes and in teaching the High School course under the supervision of the Principal and his staff.

(*g*) Special instruction by the Principal and the Department Masters.

(*h*) Hygiene.

(*i*) School Law in reference to the duties of Teachers and Pupils.

Practical Teaching.—The method employed is, in its main features, similar to that used in the County Model Schools and in the Normal Schools. First the Principal discusses the organization, etc., of a High School; shows *how benefit* is to be derived from observation and the criticism of the Teachers. *Then classes* are taught by the Departmental Masters and notes taken by the *Teachers-in-training*. Lesson are then assigned by the Department Masters,

notes of which have to be submitted to, and criticised by, the Master before the actual teaching is done. The Teachers-in-training have also to teach one another and to criticise one another's teaching in presence of the Master.

EXAMINATIONS.—During the session, the Teachers-in-training are subjected to such oral and written examinations on the course of study as the Principal may deem expedient. At the close of the session they undergo an examination in Practical Teaching by one of the High School Inspectors, and also a written examination on papers prepared by the Departmental Examiners on specific subjects. At the Examination in Practical Teaching each candidate is allowed to teach lessons which he has prepared for the occasion, and a scheme of which he hands to the examiner; but he shall also teach lessons the subjects of which shall be selected by the examiner, sufficient time, however, being allowed for preparation in this case also. The results of these examinations, together with the report of the Principal, based on the record in the Training Register, shall determine the final standing of each candidate.

WRITTEN EXAMINATION.—The written examination embraces the following subjects:—

(*a*) Mental and Moral Science in their relation to the work of teaching; Observation, and the training of the Senses; Association; Memory; Reasoning; Imagination; The Conduct of the Understanding; The Will, and how to train it; Habit and Character; Authority and Discipline; Rewards and Punishment.

(*b*) The History of Education.

(*c*) The practical application of the principles of Education:—School Organization and Management; Special Methods in the Departments of *English, Mathematics, Science, Classics, French and German.*

(*d*) Hygiene.

(*e*) School-law in reference to the duties of Teachers and Pupils.

No certificate is awarded to a candidate who fails to satisfy the examiners that he has made himself acquainted, both theoretically and practically, with the best methods of teaching at least the elements of all the subjects covered by the Non-Professional Certificate. The Professional Certificate of each passed candidate shows in detail those Departments or Subjects which he is most competent to teach. The Departmental Examiner has power to reject any candidate who may show himself deficient in scholarship.

STATISTICS.

These Institutes are, at present, connected with two (2) of the Collegiate Institutes, viz., Kingston and Hamilton.

The Examination in December, 1885, which was the first held under the new regulations, resulted as follows:—

ASSISTANT HIGH SCHOOL MASTERS	23
FIRST CLASS PUBLIC SCHOOL TEACHERS	10

4. Teachers' Institutes.

The 65th Section of the School Act, 1850, authorized the holding of a "Teachers' Institute" in each county of Upper Canada. The first Institute under this provision of the law was held by the Masters of the Normal School—Mr. T. J. Robertson, M.A., the first Principal of the School, and Mr. H. Y. Hind, Second Master—in June, July, and August, 1850. Afterwards Institutes were held by local parties in connection with Teachers' Associations. In 1872, these Institutes were put upon a more efficient footing. A strong desire *having been expressed* by many teachers of the Province, Dr. J. H. *Sangster, the late* Principal of the Normal School, gratuitously

devoted a large portion of his time during the summer and autumn of 1873, to the work, and held Teachers' Institutes in seventeen counties. The teachers themselves defrayed the expenses, and the attendance averaged 142 teachers.

Formation and Object.—A Teachers' Institute is formed in each County or Inspectoral Division, having for its object the reading of papers and the discussing of matters that have a practical bearing on the daily working of the school-room.

Money Grant.—The Minister of Education apportions to each Institute the sum of twenty-five dollars ($25), and the Municipal Council pays the same amount.

Officers.—These are a President, Vice-President, and Secretary-Treasurer. These, together with a Committee of Management composed of five members, are elected annually.

Annual Meeting.—Each Institute meets at least once a year for the election of officers, and the discussion of such matters as may be submitted by the Committee.

Time and Place of Meeting.—The Education Department, after consultation with the Inspector, arranges the time and the place of meeting. A copy of the programme of proceedings is sent to every Teacher in the Inspectorate at least one month before the time of meeting.

Attendance.—Every Teacher, unless prevented by illness, must attend continuously the meetings, which last for two days.

Report.—The Inspector reports to the Department.

Director of Teachers' Institutes.—The Director of Teachers' Institutes takes part in the proceedings, by discussing at least three subjects on the Programme, and by delivering a Public Lecture.

5. Teachers' Reading Course.

The Minister of Education has arranged a Course of Reading for Teachers, by means of which, while not ignoring professional obligations, they may carry on daily the work of self-culture, and at the same time learn to regard their vocation from a higher standpoint. The Course extends over three years, and embraces pedagogics, science and literature. It can be mastered in the allotted time, without difficulty—one hour per day being quite sufficient. It will be observed that the books in the Professional Course are those already used at the Normal School and Training Institutes, so that by taking them up in their Reading Course, the work required for entering the higher grades of the profession is simply prepared in advance.

As the Course is purely voluntary no examination will be held in connection with it. Should, however, the teachers of any Inspectoral Division agree to read the Course with this end in view, and should the County Board of Examiners make adequate pro-

vision for such examination, the Department would recognize by special certificate this additional element of professional culture. Such a certificate would, no doubt, be duly appreciated by trustees and the public generally, as it would entitle the holder to a strong claim upon their liberality. It will be the duty of the Directors of Teachers' Institutes to make such comments and give such directions to teachers in regard to the best methods of profiting by this Course as they may deem expedient.

LIST OF BOOKS RECOMMENDED.

PEDAGOGICS.

Third Class Teachers.

(Two books to be taken in one year in the order given.)

1. Outlines of the Study of Man.—*Hopkins.*
2. Lectures.—*Fitch.*
3. Educational Reformers.—*Quick.*
4. Psychology of Cognition.—*Jardine.*
5. Education as a Science.—*Bain.*
6. Education.—*Spencer.*

These text-books are all on the Normal School Course for Second Class Teachers.

Second Class Teachers.

(Two books to be taken in one year in the order given.)

1. Systems of Education.—*J. Gill.*
2. Lectures on the History of Education.—*Jos. Payne.*
3. The Action of Examinations.—*H. Latham.*
4. School Management.—*Jos. Landon.*
5. Teachers' Manual and Method of Organization.—*R. Robinson.*
6. Culture Demanded by Modern Life.—*E. L. Youmans.*

The text-books named are all on the Professional Course for First Class Teachers.

First Class Teachers.

1. Psychology.—*Sully.*
2. Greek Education.—*Mahaffy.*
3. History of Pedagogy.—*Hailman.*
4. Mental Physiology.—*Carpenter.*
5. Education and Educators.—*Kay.*
6. The Schoolmaster.—*Ascham.*

PHYSICAL SCIENCE AND NATURAL HISTORY.

(Six books to be taken in one year in the order given.)

1. The Fairy Land of Science.—*Buckley.*
2. Ants, Bees, and Wasps.—*Sir John Lubbock.*
3. Sound Bodies for our Boys and Girls.—*Blaikie.*
4. Forms of Water.—*Tyndall.*
5. Physiography.—*Huxley.*
6. Heat as a Mode of Motion.—*Tyndall.*
7. Methods of Study in Natural History.—*Agassiz.*
8. *Homes without Hands.—Woods.*
9. *Elements of Physical Geography.—Geikie.*
10. Physical Geography of the Sea.—*Maury.*
11. The Races of Man.—*Peschel.*
12. Connection of the Physical Sciences.—*Somerville.*
13. Common Sense of the Exact Sciences.—*Clifford.*
14. Physical Forces.—*Faraday.*
15. The Sun.—*Proctor.*
16. Wild Animals, their Life and Habits.—*Wolf.*
17. Flowers and their Pedigrees.—Grant Allan.
18. Health.—Corfield.

LITERATURE AND HISTORY.

(Eight books to be taken in one year in the order given.)

1. Julius Cæsar.—*Shakespeare.*
2. Every-day English.—*R. G. White.*
3. Selections from Wordsworth.—*M. Arnold.*
4. Milton and Wordsworth.—*English Men of Letters.*
5. Industrial Biography.—*Smiles.*
6. Short History of the English People.—*Green.*
7. Montcalm and Wolfe.—*Parkman.*
8. The English Constitution.—*Bagehot*
9. Macaulay's Life and Letters.—*Trevelyan.*
10. Getting on in the World.—*Matthews.*
11. Walks about Rome.—*Hare.*
12. Words and their Uses.—*R. G. White.*
13. Johnson's Chief Lives of the Poets.—*Matthew Arnold.*
14. Expansion of England.—*Seeley.*
15. Words and Places.—*Taylor.*
16. English Literature (condensed).—*Taine.*
17. The United Netherlands.—*Motley.*
18. Oliver Cromwell.—*Carlyle.*
19. Life of Johnson.—*Boswell (Murray's Edition.)*
20. Language and Languages.—*Farrar.*
21. Paradise Lost.—*Milton.*
22. Life and Correspondence of Thos. Arnold.—*A. P. Stanley.*
23. In Memoriam and the Princess.—*Tennyson.*
24. Nicholas Nickleby.—*Dickens.*

6. The Ontario Teachers' Association.

In January, 1861, about 120 delegates from the Teachers of the Province met in Toronto to establish among Canadian Teachers an Association similar to the "American National Teachers' Association" in the United States.

Objects.—The objects of the Association were: 1st, To secure the general adoption of the most approved systems of imparting instruction; 2nd, To secure the improvement of our Text Books, or adoption of others more suitable to the wants of the community; 3rd, To enlarge the views of teachers and stimulate their exertions for the advancement and diffusion of knowledge; 4th, To encourage the frequent interchange of ideas and kindly intercourse among the members of the profession throughout the country. The first President of the Association was the late T. J. Robertson, M.A., the first Principal of the Toronto Normal School.

Enlargement.—About ten years after its formation, a union with the "Ontario Grammar School Masters' Association" took place. As the result of this union, the Association resolved itself into three sections: The High School Section; The Inspector's Section; and The Public School Teachers' Section.

Officers.—These are a President; six Vice-Presidents; a Recording Secretary; a Corresponding Secretary; five Councillors; and one Delegate from each Branch Association.

Standing Committees.—Each of the three sections has a Standing Committee, which brings before the Annual Meeting of the Association a written report on the subject or subjects upon which it was appointed to deliberate.

III. CLASSICAL SCHOOLS.

These schools are as follows:—

1. The High Schools.
2. The Collegiate Institutes.
3. Upper Canada College.

1797–1798.—In 1797 the Legislature of Upper Canada memorialized George III., soliciting a grant of land for the endowment of a Grammar School in each District, and a University for the whole Province. A favorable reply was received, and in the despatch to that effect it was specified that the Grammar Schools to be established were to be free. The acting Governor of Upper Canada, Peter Russell, Esq., President of the Executive Council, then requested the members of the Council, the judges and law officers of the Crown, to draw up a report. They did so, and in 1798 recommended a grant of 500,000 acres of land for the establishment of a Grammar School in each of the four Districts into which Upper Canada was then divided, and of a central University at some future time. They recommended, also, that a grant of £3,000 be made to each of the Districts, for the erection of "a plain but solid and substantial building, containing a school-room sufficient to hold one hundred boys without danger to their health from too many being crowded together; and also a set of apartments for the master." Kingston and Newark (now Niagara) were recommended as eligible sites; and to these, when funds were sufficient, Cornwall and Sandwich were to be added.

1803–1806.—In 1803 Mr. John Strachan (afterwards the first Bishop of Toronto), who had come from Scotland in 1799 to take charge of the projected college—which scheme had been abandoned—removed from Kingston to Cornwall, where he opened a private school, which was subsequently (1806) constituted the Grammar School of the District. In 1806 a temporary Act was passed by the Provincial Legislature (made permanent in 1808), establishing a Classical and Mathematical or Public School in each of the eight Districts into which Upper Canada was then divided, and granting the sum of £100 per school as the yearly stipend of the master, who was to be appointed by the Governor on the nomination of the Trustees, who were appointed in each District* by Lieutenant-Governor Gore.

1819.—In 1819 provision was made for an additional Grammar School; annual examinations were instituted; a report was to be sent to the Governor; and ten Common School pupils had to be educated free of charge. If the number of pupils did not exceed ten, the teacher's allowance was reduced to £50.

1831–1839.—In 1831 the House of Assembly recommended an annual grant of £4,400 for the support of eleven free Grammar Schools. *In 1839 the District* Schools were converted into Gram-

* *Eastern, Johnstown, Midland, Newcastle, Home, Niagara, London, Western*

mar Schools; five Trustees for each were to be appointed by the Government; a portion of the University endowment was applied to their support; and 250,000 acres of Crown lands were set aside as a permanent endowment. On condition of the inhabitants raising an equal sum, £200 was granted for the erection of the Grammar School in each District; also £100 to each of four other Grammar Schools, situated at least six miles from the county town, and attended by sixty pupils.

1853–1858.—In 1853 an improvement in the condition of Grammar Schools was effected by the Chief Superintendent of Education. An Act passed at that time provided for the examination of candidates for the position of Head Master, who were not graduates. The Council of Public Instruction was also authorized to appoint Inspectors of High Schools and fix their salaries. In 1858 the Model Grammar School was established at Toronto to exhibit the best system of management and teaching, and to serve as a training school for Grammar School Masters. It was closed in 1863.

1865–1871.—In 1865 an Act relating to Grammar Schools was passed which contributed to the increased efficiency of these schools. In 1871 further legislation took place for the benefit of these schools. With a view to recognize the existence of a superior class of High Schools and to encourage their multiplication, the following important provision was inserted in the Act, viz.:—

"Whereas it is desirable to encourage the establishment of superior classical schools, it shall be lawful for the Lieutenant-Governor in Council to confer upon any High School, in which not less than four masters are fully employed in teaching the subjects of the prescribed curriculum, and in which the daily average of male pupils studying the Latin or Greek language shall not be less than sixty, the name Collegiate Institute; and towards the support of such Collegiate Institute it shall be lawful for the Lieutenant-Governor in Council to authorize the payment of an additional sum, at the rate of, and not exceeding seven hundred and fifty dollars per annum, out of the Superior Education Fund, provided under the authority of the tenth section of the Consolidated Grammar School Act, passed in the twenty-second year of Her Majesty's reign, and chaptered sixty-three; Provided, that if in any year the average of pupils above described shall fall below sixty, or the number of masters be less than four, the additional grant shall cease for that year; and if the said average shall continue to be less than sixty, or the number of masters less than four, for two successive years, the institution shall forfeit the name and privileges of a Collegiate Institute, until restored by the Lieutenant-Governor in Council, under the conditions provided by this section."

1874–1879.—In 1874 a clause was introduced into the "High Schools' Act" requiring candidates for Head-masterships to present evidence of their knowledge of the Science and Art of Teaching, and of the Management and Discipline of Schools. An allowance of $50 a year was made to such schools as were able to give their pupils a course of elementary military instruction. In 1879 the Municipal Grant was made equal to the Legislative Grant.

1885.—In 1885 the Legislative Grant was apportioned on (1) basis of salaries paid to masters and assistants; (2) on character and equipments of school buildings and appendages; (3) on average

I. The High Schools.

The High Schools, like the Public Schools, are open to pupils of both sexes who can pass an Entrance Examination based on the Fourth-class work of the Public Schools, excepting Music, Business Forms and Book-keeping. They are intended to furnish a higher English, or a classical course with modern languages, so that the pupils may be fitted to pass the Matriculation Examination of any of the Universities of Ontario; to enter business; or to pass the Teacher's NON-PROFESSIONAL examination.

Legislative and Municipal Grants.—The Municipal Grant to each High School is now by law made equal to the Legislative Grant, which is apportioned by the Minister of Education on the basis of salaries paid to masters and assistants; the character and equipment of school buildings and appendages and the average attendance of pupils.

QUALIFICATIONS OF HEAD MASTERS AND ASSISTANTS.

The qualifications for the Head-mastership of a High School or Collegiate Institute are (*a*) a degree in Arts obtained, after a regular course of study, from any chartered University in the British Dominions, and (*b*) one year's successful teaching as Assistant Master in a High School, or in a College, or in a Private School.

A High School Assistant must hold a First-class Professional Public School Certificate; or be a Graduate in Arts (as above), or an Undergraduate in Arts of at least two years' standing, who has obtained a Professional Certificate at a Training Institute.

High School Board.—Each High School is a corporation under the government of a Board of six Trustees, who are appointed by the County Council, or in case of a city or town separated from a county, by the Council of each respectively.

Duties.—The High School Board appoints Teachers—a Head Master and at least one Assistant—possessing the qualifications required by the Regulations, provides for the requisite accommodation, furniture and apparatus, and upon its own requisition can require the Municipal Council of the district to raise such funds as the school may annually require.

Inspection.—It is the duty of each High School Inspector to visit the High Schools or Collegiate Institutes assigned to him, at least once in each year; to spend not less than one day in each school having two or three masters; in schools with four or over four masters, to spend two or more days, and report in each case to the Department the result of his observations and enquiry.

Meteorological Observations.—Masters of certain High Schools make Meteorological Observations and transmit monthly to the Education Department abstracts from their journals. For these *observations an additional* allowance at the rate of $15 per month *is made for each consecutive* month during which the observations

COURSE OF STUDY IN HIGH SCHOOLS AND COLLEGIATE INSTITUTES.

Pupils, on entering the High School, must pursue one or other of the following courses: (*a*) That prescribed for a High School Commercial Course. (*b*) That prescribed for Matriculation into any of the Universities of Ontario, or for the Preliminary Examination of any of the learned professions. (*c*) That prescribed for a Teacher's Non-Professional Certificate. Special Classes for the study of Agricultural Chemistry may be established by the Trustees, with the concurrence of the Head Master.

Form I.

1. READING (ORAL) AND PRINCIPLES OF.—A general knowledge of the principles of elocution; reading with proper expression, emphasis, inflection, and force.

2. ORTHOGRAPHY AND ORTHOEPY.—The pronunciation, the syllabication, and the spelling from dictation, of passages from any English author, and the spelling of all non-technical English words.

3. ENGLISH GRAMMAR.—Etymology and Syntax; exercises.

4. COMPOSITION.—The framing of sentences and paragraphs; familiar and business letters; paraphrasing; synonyms; correction of errors; themes based on the prose literature prescribed for this Form.

5. LITERATURE.—The critical reading of such works as may be prescribed by the Education Department, from time to time.

6. HISTORY.—The leading events of Canadian and English History.

7. GEOGRAPHY.—Political, Physical, and Mathematical Geography. Map Geography generally; Canada and the British Empire more particularly.

8. ARITHMETIC AND MENSURATION.—Arithmetic in theory and practice; areas of rectilinear figures, and volumes of right parallelopipeds and prisms; the circle, sphere, cylinder, and cone; Mental Arithmetic.

9. ALGEBRA.—Elementary rules; factoring; greatest common measure; least common multiple; fractions; simple equations of one, two, and three unknown quantities; simple problems.

10. EUCLID.—Book I., with easy problems.

12. PHYSICS.—The elements of Physics, as treated in Huxley's Introductory Science Primer, and Balfour Stewart's Science Primer.

14. BOTANY.—The elements of structural Botany, including systematic examinations of common plants selected to show variety of structure in the different organs; true nature of the parts of the flower; various forms of roots, structure and uses, how distinguished from underground stems; various forms of stems, bulbs and tubers, herbs, shrubs and trees; nature and position of buds; forms and disposition of foliage leaves; kinds of inflorescence, special forms of flower-leaves, morphology of the calyx, corolla, stamens, and pistil; modifications of the flower due to adhesion, cohesion, and suppression of parts; classification of fruits; the seed and its parts; germination; the vegetable cell; protoplasm; chlorophyll; formation of new cells; various kinds of tissues; intercellular spaces; structure of leaves; exogenous and endogenous growth; food of plants; reproduction in flowering plants; nature of the pollen-grain; fertilization of the ovule; reproduction in ferns; the spore. Outlines of classification; examination and classification of common plants belonging to the following natural orders:—Ranunculaceæ, Cruciferæ, Malvaceæ, Leguminoisæ, Rosaceæ, Sapindaceæ, Umbellifræ, Compositæ, Labiatæ, Coniferæ, Araceæ, Liliaceæ, Triliaceæ, *Iridaceæ*, Gramineæ; the characters and general properties of these orders.

15. LATIN.—The Elementary Latin Book, grammar, composition, and the *texts* prescribed from time to time by the Education Department.

16. GREEK.—The Elementary Greek Book.

17. FRENCH.—The Elementary French Book, grammar, composition, and the texts prescribed from time to time by the Education Department.

18. GERMAN.—The Elementary German Book, grammar, composition, and the texts prescribed from time to time by the Education Department.

19. WRITING.

20. BOOK-KEEPING.—Single and double entry; commercial forms; general business transactions.

21. DRAWING.—Freehand; practical Geometry; perspective; industrial designs. (See Appendix C.)

22. MUSIC.—Vocal and Theoretical.

Form II.

1. READING—Course for Form I. continued.

2. ORTHOGRAPHY AND ORTHOEPY.—Course for Form I. continued.

3. ENGLISH GRAMMAR—Course for Form I. continued. (As prescribed for the Pass Matriculation Examination of the University of Toronto).

4. COMPOSITION.—Course for Form I. continued.

5. LITERATURE.—The critical study of the texts prescribed from time to time for the Pass Matriculation Examination of the University of Toronto.

6. ENGLISH HISTORY (including Colonial History).—From William III. to George III. inclusive. Roman History from the commencement of the Second Punic War to the death of Augustus. Greek History from the Persian to the Peloponnesian Wars, both inclusive (University Pass).

7. GEOGRAPHY, MODERN.—North America and Europe. ANCIENT.—Greece, Italy, and Asia Minor (University Pass).

8. ARITHMETIC.—Course for Form I. continued (University Pass).

9. ALGEBRA.—To the end of Quadratics (University Pass).

10. GEOMETRY.—Euclid, Books I., II., III.; easy deductions (University Pass).

12. PHYSICS.—Definitions of velocity, acceleration, mass, momentum, force, moment, couple, energy, work, centre of inertia, statement of Newton's Laws of Motion, composition and resolution of forces, condition for equilibrium of forces in one plane. Definition of a fluid, fluid pressure at a point, transmission of fluid pressure, resultant fluid pressure, specific gravity, Boyle's Law, the barometer, air-pump, water-pump, siphon (University Matriculation Examination).

13. CHEMISTRY.—Reynolds' Experimental Chemistry (Chaps. I. to XVI. inclusive).

14. BOTANY.—Course in Form I. continued.

15. LATIN; 16. GREEK; 17. FRENCH; 18. GERMAN.—Examination subjects as prescribed from time to time for Pass Matriculation into the University of Toronto.

19. WRITING.—Course for Form I. continued.

20. BOOK-KEEPING AND COMMERCIAL TRANSACTIONS.—Course for Form I. continued.

21. DRAWING.—Course for Form I. continued.

22. MUSIC.—Course for Form I. continued.

23. PRECIS-WRITING AND INDEXING.

24. PHONOGRAPHY (optional).

Form III.

3. ENGLISH GRAMMAR.—Course for Form II. continued.

4. *COMPOSITION.—Course* for Form II. continued.

5. *LITERATURE.—The* critical study of the texts prescribed from time to *time for Honor Matriculation* into the University of Toronto.

6. HISTORY.—English History under the Houses of Tudor and Stuart.

7. GEOGRAPHY.—The British Empire, including the Colonies (Honor Matriculation University.)

9. ALGEBRA.—To the end of Binomial Theorem (Honor Matriculation University).

10. GEOMETRY.—Euclid, Books I. to IV. inclusive, Book VI. and definitions of Book V. (Honor Matriculation University).

11. TRIGONOMETRY.—(Honor Matriculation University) The solution of Triangles.

13. CHEMISTRY.—Reynolds' Experimental Chemistry, Chaps. I. to XXVI. inclusive. (University Matriculation Examination.)

14. BOTANY.—The structure and classification of Canadian flowering plants (University Matriculation Examination.)

15. LATIN ; 16. GREEK ; 17. FRENCH ; 18. GERMAN.—Examination subjects as prescribed from time to time for Honor Matriculation into the University of Toronto.

Form IV.

The subjects for study in Form IV. are those now prescribed by the University of Toronto for Senior Matriculation, Pass and Honors. As far as possible, the classes shall be the same as those in Forms II. and III.

Commercial Course.

Candidates for a diploma in the Commercial Course are examined at the same time and place, and on the same papers as candidates for Second-class Non-Professional Certificates, that is to say, in the following subjects as prescribed for Form II., excepting Ancient History and Geography, viz :—Nos. 1-10, 13, 21, with an option between 15 or 17 or 18, group 12 and 14, and group 19, 20, and 23.

Graduation Diploma.

Any pupil who passes the Departmental or the University Examination in any of the courses prescribed for Forms II., III. or IV., in High Schools, is entitled to a Graduation Diploma signed by the Minister of Education and the Head Master of the High School at which such course was completed.

STATISTICS relating to the HIGH SCHOOLS OF ONTARIO for the years 1854, 1864, 1874, 1884.

	1854.	1864.	1874.	1884.
Population	950,551 in 1850.	1,396,091 in 1860.	1,620,851 in 1870.	1,913,460 in 1880.
No. of Schools	64	95	108	106
No. of Pupils attending Schools	4,287	5,589	7,871	12,737
No. of High School Teachers	99	139	248	358
Amount of Legislative Grant	$21,939	$45,604	$76,874	$85,206
Amount of Municipal School Grants and Assessments	$17,496	$35,266	$156,826	$220,668
Other Receipts	$11,618	$9,974	$65,260	$102,103
Total Income from all Sources	$51,053	$90,844	$298,960	$407,977
Paid Masters' Salaries	$43,490	$73,258	$179,946	$282,776
Paid for Sites, Buildings and Repairs.	$3,404	$6,139	$63,684	$34,013
Other Expenditures	$139	$6,419	$42,963	$68,637
Total Expenditures	$47,033	$85,816	$286,593	$385,426
No. of School-Houses. { Wood	36	34	21	6
Stone or Brick	28	61	87	100

2. Collegiate Institutes.

The High School Act, passed in 1885, contains the following provision in regard to Collegiate Institutes, viz.:—

On the Report of the Minister of Education, and subject to the regulations of the Education Department, any High School having—

(1) Suitable school buildings, out-buildings, grounds and appliances for physical training;

(2) Library, containing standard books of reference bearing on the subjects of the programme;

(3) Laboratory, with all necessary chemicals, and apparatus for teaching the Elements of Sciences;

(4) Four Masters at least, each of whom shall be specially qualified to give instruction in one of the following departments: Classics, Mathematics, Natural Science and Modern Languages, including English;

(5) Such other Assistants as will secure thorough instruction in all the subjects on the curriculum of studies for the time being sanctioned by the Education Department for Collegiate Institutes;

May be constituted a Collegiate Institute by order of the Lieutenant-Governor in Council.

STATISTICS RELATING TO COLLEGIATE INSTITUTES.

LOCALITY.	Annual Income.	Number of Masters.	Number of Pupils.
	$		
Barrie	5,145	5	171
Brantford	11,564	8	305
Cobourg	4,482	4	166
Collingwood	9,109	5	208
Galt	9,536	5	139
Guelph	4,996	4	205
HAMILTON (Training Institute for Assistant High School Masters and First Class Public School Teachers)	14,100	15	562
KINGSTON (Training Institute for Assistant High School Masters and First Class Public School Teachers)	5,940	9	160
London	11,082	8	294
Ottawa	10,500	8	268
Owen Sound	5,164	5	194
Perth	5,000	4	110
Peterboro'	6,690	6	170
St. Catharines	7,500	7	200
St. Mary's	4,492	5	222
St. Thomas	7,500	7	250
Stratford	8,000	7	235
Strathroy	6,278	5	245
Toronto	14,000	12	424
Whitby	5,800	9	140

3. Upper Canada College.

The history of this College dates back to the year 1828, when Sir John Colborne, who had just been transferred from the Governorship of one of the Channel Islands to that of Canada, being of

opinion that the country was not ripe for a University on the scale contemplated in a Royal Charter which had been procured for that purpose, thought it better to found a preliminary and preparatory institution which should meet the immediate educational wants of the country. It was a transcript, more or less close, of an institution in the Island of Guernsey—Elizabeth College—which Sir John had been so recently engaged in reviving. Plans for the erecting of a school-house and four dwelling-houses in connection with "Minor College," as it was frequently termed, in allusion to the university that was to be, were called for in May, 1829, and the College was opened on the 8th of January following. Meanwhile work was carried on in the old Royal Grammar School. The authorities have always kept before them as a model the great public schools of England, and it still continues to be carried on with special regard to that union of the culture of high moral principle with the production of sound scholarship, which is the ideal aimed at in those institutions.

Endowment.—At the time of its foundation it was endowed with a large grant of public lands, from which it now derives an annual income of $15,000, in addition to its building and grounds in the City of Toronto. Its pupils number about 300, and it aims at preparing them for matriculation in the Provincial and other Universities, and for different professions and pursuits. It is governed by a Committee of the Senate of the Provincial University, of which it was made an adjunct in 1837, under statutes passed by it from time to time; but such statutes are subject to the approval of the Lieutenant-Governor.

The College can accommodate from 250 to 300 pupils; and since its opening in 1829 upwards of 7,000 of the youth of the Province have received their education, in whole or in part, within its walls.

COURSE OF INSTRUCTION.

FORMS.—The College is divided into Six Forms or Classes, and the regular curriculum extends over a course of six years; though, by steady application and hard study, some boys are able to pass through the Six Forms in five or even four years.

CURRICULUM.—The full curriculum embraces an extended course in Latin, Greek, Mathematics, French, German, English Grammar, Literature and Composition, History and Geography, both ancient and modern, Experimental Chemistry, Physiology, Biblical Knowledge, the usual Commercial Branches, Drawing, Music, Gymnastics, Fencing, and Drill Exercises.

EXHIBITIONS.—Eight exhibitions, entitling the holders to free tuition for a year in the College or any High School or Collegiate Institute, and to $30 in money, are annually awarded in the Fourth and Fifth Forms.

PRIZES.—1. The Governor-General's Silver Medal, awarded to the pupil of the Fifth Form who stands highest in the final examinations. 2. Books to the value of $300 are given by different friends.

LABORATORIES, ETC.—Two laboratories—chemical and physical—with apparatus to the value of $500, are used in connection with the College work.

LIBRARY.—The pupils have access to a library containing about 1,200 volumes.

GYMNASIUM.—Physical culture is also attended to, as there is a well-equipped gymnasium in the College grounds, and among the instructors is a teacher of fencing, gymnastics, and drill.

IV. THE UNIVERSITY OF TORONTO.

UNIVERSITY LEGISLATION IN ONTARIO.

Before giving a detailed account of the Provincial University, and the other Universities and Colleges of the Province, a brief summary of the different Legislative enactments made from time to time may be interesting.

1819.—It has been already noted (page 5) that the project for a College, which had engaged much attention, was abandoned at the close of the last century. But in 1819 the Executive Council again took the matter into consideration, and recommended that 500,000 acres of land be disposed of for the purpose of establishing a University. The estimate of the Council comprised £10,000 for buildings and appliances, with £4,000 per annum for salaries, scholarships, and contingencies.

1820.—In 1820 it was enacted that on the establishment of a University it might be duly represented in Parliament. In March, 1827, the charter of King's College was obtained by Sir Peregrine Maitland, and Lord Bathurst's despatch promised a grant of £1,000 per annum for the College buildings. The Governor was directed to endow King's College from the Crown Reserves.

1828-9.—In 1828-9 the Wesleyan Methodists began to move for the establishment of their Upper Canada Academy in Cobourg, which, in the year 1841, became the University of Victoria College, under the presidency of the Rev. Dr. Ryerson, and received an annual grant of £500 from the Legislature. The College opened with the Faculty of Arts; Medicine was added in 1854, Law in 1862, and Theology in 1872.

1835.—In 1835, by the will of the Right Rev. Bishop Macdonell, of Kingston, four acres of land were devised for a proposed Roman Catholic College, which was afterwards incorporated as Regiopolis College, and was opened at Kingston in 1846. It is not now in operation.

1837.—In 1837 the Provincial Legislature, having been authorized by the Imperial Government to deal with the Charter of King's College, passed an Act amending the same and connecting Upper Canada College with the University.

1840-1.—In 1840 an Act incorporating a Presbyterian College at Kingston was passed and reserved for the Queen's pleasure, but in 1841 Her Majesty granted a Royal Charter to the Institution, as "Queen's College at Kingston." The Faculties of Theology and Arts were thereupon established; Medicine was added in 1854, and Law in 1861.

1842.—In 1842 the foundation stone of King's College was laid by Sir Charles Bagot, Governor, and in June, 1843, the University was formally opened under the Presidency of the Right Reverend Bishop Strachan.

1843.—In 1843 an effort was made to affiliate King's College and Queen's College, but it failed, and an agitation began under which King's College Charter was again amended by the Act of 1849, and the Toronto Institution was denuded *of its Theological* Faculty.

1848.—In 1848 St. Joseph's College was established at Bytown (Ottawa). *It is now known as the College* of Ottawa.

1851-2.—The authorities of the Church of England in this Province, having determined upon the establishment of another University, on the abolition of the Faculty of Theology in King's College, obtained an Act of Incorporation in 1851 for a new College, and in 1852 a Royal Charter issued to the University of Trinity College, Toronto, and the Diocesan School of Theology, at Cobourg, which had been in existence for several years under the Venerable Archdeacon Bethune, who subsequently became the second Bishop of Toronto, was thereupon merged in it.

1853.—In 1853 the Legislature again amended the Charter of the University of Toronto (the new name of King's College), and separated the University from the College, depriving it at the same time of the Professors of Law and Medicine. By this Act the University became the examining body, also conferring degrees in Arts, Law, and Medicine, and the College was constituted a teaching institution for the faculty of Arts. Convocation was abolished, and the government was vested in a Senate appointed by the Crown.

1857.—In 1857 the Methodist Episcopal Church established a Seminary at Belleville for the education of students of both sexes, which in 1866 and 1871 was incorporated as the University of Albert College (now affiliated as Albert College with Victoria University).

1868.—In 1868 the annual Legislative Grants, which had been long enjoyed, were withdrawn from the following institutions: Victoria College, $5,000, and $750 for Medical Faculty; Queen's College, $5,000; Regiopolis, $3,000; St. Michael's College, $2,000; Trinity College, $4,000; Ottawa College, $1,400; L'Assumption College, $1,000; and $750 each for the Medical Faculties of Kingston and Toronto.

1873.—In 1873 another Act modifying the Constitution of the University of Toronto was passed. The main features will be found in the account of the University of Toronto on page 43.

1874.—In 1874 the Charter and Acts relating to Victoria College were repealed, and a new Act passed for the appointment of the College Board by the General Conference of the Methodist Church of Canada. By this same Act the Senate was composed of the President and the Professors of the different Faculties, with power to confer degrees in Arts, Science, Law, Divinity and Medicine. The Board of Trustees of Queen's College was made a self-perpetuating body, and the University became the University of the Presbyterian Church in Canada. Convocation was composed of Trustees, Lecturers, Tutors, Fellows, Graduates and Alumni, or students being undergraduates; a Council was organized; provision made for the registration of Graduates or Alumni as might desire to vote for elective members of the Council and for the Chancellor; the Principal was declared to be Vice-Cancellor, and the Board of Trustees were empowered to elect a Vice-Principal.

1878.—In 1878 the Western University of London, Ont., was incorporated, and power given to Huron College to affiliate.

1879.—In 1879 provision was made by Act of Parliament that the Dean of the Faculty of Theology should be nominated by the "Board of Victoria College" and appointed by General Conference. In the election of representatives of the alumni to the Senate all graduates of three years, and registered, were entitled to vote and declared eligible for election.

1881.—In 1881 power was given to Knox College to confer degrees in Divinity.

1883.—In 1883 certain changes were made in the "Board of Victoria College" by the addition of six representatives of the graduates and of the President. The Senate was also increased by the addition of the Principal and Professors from the Wesleyan Theological College, Montreal.

1884.—In 1884 Victoria University was formed by the amalgamation of Victoria College and Albert College. All powers and functions were vested in the General Conference of the Methodist Church. The title of the Board was changed to "The Board of Regents of Victoria University." The President was constituted Chancellor, and a Vice-Chancellor was to be elected by the graduates every two years. The number of representatives of the graduates



was increased to eight, and affiliated institutions were allowed representation. By the Act passed this year the High School Masters were allowed two representatives on the Senate of the University of Toronto, and that University was empowered to grant the degree of LL.D. *honoris causa*.

PERIODICALS PUBLISHED BY STUDENTS AT THE UNIVERSITIES AND COLLEGES.

The 'Varsity	University of Toronto.
Acta Victoriana, *Kosmos*	Victoria University.
Rouge et Noir	University of Trinity College.
Queen's College Journal	Queen's University.
The Sunbeam	Ladies' College, Whitby.
The Portfolio	Wesleyan Ladies' College, Hamilton.
Knox College Monthly	Knox College, Toronto.

UNIVERSITY OF TORONTO AND UNIVERSITY COLLEGE.

These two corporations constitute the Provincial University. The University was originally established by Royal Charter in 1827, under the title of King's College; the President being required to be a clergyman of the United Church of England and Ireland, and the government was vested in the "College Council," composed of the Chancellor and the President, and of seven of the Professors, members of the Established Church, but no religious test or qualification was to be required of students, or admission to any degree in any Art or Faculty, excepting in Divinity. In consequence of a feeling of discontent engendered by its exclusive character, the Charter was amended in 1834, and it was provided that in future the President need not be an incumbent of an ecclesiastical office, nor need any member of the Council, nor any Professor, be a member of the Church of England, and no religious test was required of students. The institution was inaugurated and the first students admitted in 1843, and the first Convocation was held in 1844.

In 1849 the University, as established by Royal Charter, was changed into that of the "University of Toronto." By this Act a change was made in the composition of the Senate, and the Faculty of Divinity was abolished, and a "Caput," consisting of the President, the Deans of the three Faculties, and a fifth member, appointed by Convocation, was formed.

In 1853 another Act was passed, under which the University was constituted with two corporations, "The University of Toronto" and "University College," the functions of the former being limited to the examination of candidates for degrees in the several Faculties, or for scholarships and honors, and the granting of such degrees, etc.; those of the latter being confined to the teaching of subjects in the Faculty of Arts. The corporation of the University now consisted of the Chancellor, appointed by the Lieutenant-Governor, the Vice-Chancellor, elected by the Senate, and such *other members of the* Senate as the Governor may appoint, Convocation having been abolished. By this Act certain institutions,



from which students might be examined, were affiliated with the University.

In 1873 further amendments were made in the constitution of the University. The Chancellor was made elective for a period of three years by Convocation, which was then re-established. The Senate was composed of the Chancellor, several *ex-officio* members, fifteen elected by Convocation and nine appointed by the Lieutenant-Governor in Council, for respective terms. Convocation was composed of all Graduates in Law, Medicine and Surgery, all Masters of Arts, and Bachelors of Arts of three years' standing, all Doctors of Science, and Bachelors of Science of three years' standing. By this Act the powers of the Senate were extended to all branches of knowledge, literature, science and arts, and also to granting certificates of proficiency to women; the power of affiliation was likewise extended; the Senate was also empowered to provide for local examinations.

1881.—By the Act passed in 1881 it was enacted that Convocation should consist of the Graduates in the several Faculties of the University, and that each Graduate should be a member of Convocation.

In 1884 the University was empowered to confer the degree of LL.D. *honoris causa;* the representation of the High School Masters on the Senate was increased to two, and "each legally qualified assistant teacher" was entitled to select from the Registrar's List a name to be voted on.

Senate.—The Senate consists of (1) the Chancellor; (2) twenty-four members—fifteen elected by Convocation and nine nominated by the Lieutenant-Governor in Council; and (3) certain *ex-officio* members: the Minister of Education; the President of University College; the Principal of Upper Canada College; a representative of the Law Society; two representatives of High School Masters; all former Chancellors and Vice-Chancellors, and two members of the Council of University College, triennially in rotation. (4) Members of Convocation.

Convocation.—This consists of the Graduates in the several Faculties, and their powers are clearly defined by Act of Parliament. This body meets at least once a year, but may meet at such times and places as the Executive Committee may order.

Faculties.—Degrees are granted in the Faculties of Arts, Law, Medicine and Engineering; instruction in the Departments of Arts and Science being given in University College and the School of Practical Science.

College Council.—The President, the Vice-President, the Professors of the different Faculties, and the Dean of Residence, form this body, which makes statutes for the good government and discipline of the College, Professors, etc., and generally for the management of the property and business thereof.

Functions.—The Functions of the University comprise the examinations of candidates for standing, scholarships and degrees in the several Faculties. It prescribes the curriculum of study, and appoints the examiners and conducts the respective examinations; it also maintains a library and museum.

Co-Education.—The Legislature of the Province, in 1884, passed the following resolution on this subject, viz.:—

That inasmuch as the Senate of the Provincial University, having for several years admitted women to the University examinations and class lists, and inasmuch as a considerable number of women have availed themselves of the privilege, but labor under the disadvantage of not having access to any institution which affords tuition necessary in the higher years in the course; in the opinion of this House provision should be made for that purpose as early as practicable in connection with University College. (This has been done.)

Instruction.—The work of instruction is performed by University College through its Professors and Lecturers. This College and the University are maintained out of the common endowment of the Provincial University, which is administered by the Bursar's Department, under the control of the Lieutenant-Governor in Council. University College is governed by a Council composed of the President and Professors. The following chairs have been established in the College, namely:—Classical literature, logic and rhetoric, mathematics and natural philosophy, chemistry and experimental philosophy, history and English literature, mineralogy and geology, metaphysics and ethics, meteorology and natural history, and lectureships on Oriental literature, in German and French.

The course of instruction follows that prescribed by the curriculum of the University of Toronto, and involves four academic years, each consisting of two terms.

The students are required to pass a matriculation examination before being recognised as regular students of the University, or entitled to its degrees. They are required to pass annual examinations in the University, so as to gain standing year by year, as well as for the particular degrees. Students who are not matriculated may attend lectures in the different departments. The junior matriculation examination is prescribed by the University Statutes.

EXAMINATIONS.

1. All Matriculated Students are required to attend the College Examinations in every department or branch prescribed by the University of Toronto as necessary for their respective standings.

2. Prizes and Honors in the College are awarded in each department on the result of the Examinations at Easter, with additional Examinations at Christmas, at the discretion of each Professor or Lecturer.

3. Candidates for Prizes and Honors are arranged, according to their Proficiency, in two classes, and those who are not Candidates for Prizes and Honors, *or who fail to obtain Honors*, are similarly arranged in the Third Class; but no *name of a Candidate for Honors* shall be entered on the Class Lists until he has *passed in all the prescribed* subjects.

4. Certificates of Honor in each department are awarded to those Students who have been placed in the First Class at the Examinations.

5. The Examinations for both Pass and Honors in the University for all Students of the Second and Third Year attending Lectures in University College, will be conducted by the Professors, Tutors, and Lecturers of the College, and conjointly with Associate Examiners appointed by the Senate, at the same time as the University Examinations for the First and Fourth Years.

6. Non-matriculated Students are not required to attend the Examinations, unless they are Candidates for Prizes or Honors, or desire to obtain Certificates of attendance.

Matriculation Examinations for the Provincial and other Universities and Colleges may be held, under the direction of the Education Department, at the same time and the same places as the Examinations for Certificates to First and Second-class Teachers.

FELLOWSHIPS.

Seven Fellowships, of the value of $500 each, are open for appointment each year, on the recommendation of the College Council. The selection will be made immediately after the publication of the result of the University Examinations in May, from among the Graduates of the University of Toronto.

The Statute requires that each Fellow shall be appointed annually; but he may be reappointed for a period not exceeding in all three years.

Each Fellow is required to assist in the teaching and practical work of the Department; to pursue some special line of study therein; and to devote his entire time during the College Terms to the work of the Department, under the direction of the Professor or Lecturer.

The Statute provides that "The Fellows shall be appointed from among the Graduates of the University of Toronto, on the recommendation of the College Council, and shall be selected with a special view to their aptitude for teaching, along with their acquirements in the work of the Department to which each Fellowship is attached." And also that "Every Fellow on accepting his appointment shall come under an obligation to fulfil the duties of his Fellowship during the College Terms of the Academic Year in which he is appointed, unless specially exempted by resolution of the College Council."

MEDALS AND SCHOLARSHIPS.

The Governor-General (Lord Lansdowne) has presented a silver medal for annual competition in University College. It is open to the competition of honor students of the third year. Mr. John Macdonald has given an annual scholarship of $50 for general proficiency to second year students. Prizes in books are also awarded. The Prince of Wales' annual scholarship of $50 is open to competition to junior matriculants of the University. The Mary Mulock scholarship is awarded for proficiency in classics. In addition to these special scholarships, there are also a number of other University scholarships and prizes open to competition.

Statistics of the University of Toronto and University College, 1884–85.

Name and Locality.	Date of Establishment or Incorporation.	Annual Income.	Source of Income.	Amount of Endowment.	Capital invested in Buildings, etc.	Number of Professors.	Number of Tutors or Lecturers.
University of Toronto and University College, Toronto.	1853. Provincial Act of Parliament.	About $76,000.	About $8,000 Fees, $67,600 Endowment, $400 Scholarship gifts.	About $1,000,000.	$500,000.	Nine (9).	Sixteen (16).

Faculties.	Length of Course.	Number of Students in each Year of Course.					Number of Graduates.
		1st Year.	2nd Year.	3rd Year.	4th Year.	Total.	
I.—Arts.							
1. Classical Literature	4 Years.	68	99	72	61	300	In Arts 1,051
2. Mathematics and Physics	"						
3. Rhetoric and English Literature	"		Students in Special Subjects			91	In Medicine.. 522
4. Modern Languages, viz.:—							
French, German, Italian	4 Years—2 Years each, *i.e.*, 3rd and 4th Years.					391	In Law 137
5. Chemistry	4 Years.						1,710
6. Oriental Literature, viz.:—							
Hebrew	3 Years *i.e.*, 2nd, 3rd and 4th Years.						
Chaldaic	2 Years, *i.e.*, 3rd and 4th Years.						
7. History and Ethnology	3 Years each, *i.e.*, 2nd, 3rd and 4th Years.						
8. Mineralogy and Geology	" " "						
9. Logic, Metaphysics and Ethics	" " "						
Agriculture	2 Years.						
10. Natural History, including Zoology and Botany	4 Years.						
11. Medicine.							
II.—Medicine.							
III.—Law.							

Schools connected with Institution.	Laboratories.				Apparatus.		Number of Volumes in Library.	Museums and their Nature.
	Chemical.	Physical.	Mechanical.	Other.	Kind.	Value.		
Eight (8)	Two.	One.	.....	Biological.	1. Physical. 2. Chemical. 3. Biological.	$14,000 11,000 2,500	28,000	1. Natural History. 2. Mineralogical and Geological. 3. Ethnological.





V. TECHNICAL SCHOOLS.

Under this head are included the following :—

1. The School of Practical Science.
2. The Ontario School of Art.
3. The Agricultural College.

I. The School of Practical Science.

Prior to the year 1871 there was no institution in the Province for practical instruction in the industrial sciences. In 1870 the Government of the Province issued a commission to Dr. Hodgins, Deputy Superintendent of Education, and to Dr. Machatti, of London, directing them to proceed to the United States for the purpose of inspecting and reporting upon any Technical or Science Schools or Colleges there established, as to their buildings, departments of study and general appliances. On their return a Report was submitted to the Government, with full details as to the cost of the proposed institution. The Government acted upon the information contained in their Report, and with a grant of $50,000 established a "College of Technology" in Toronto. The location was found to be unfavorable, and the building defective. Consequently, in 1877, the Hon. Adam Crooks, Q.C., Minister of Education, had the building sold, and a suitable one was erected close to the Provincial University. In this way the services of four of the University Professors were engaged in the following Departments of the School, viz., Chemistry, Natural Philosophy, Geology and Mineralogy, Natural History and Botany. The new building was opened for students in September, 1878.

COURSE OF STUDY.—The course embraces three departments : 1. Engineering—Civil and Mining. 2. Assaying and Mining Geology. 3. Analytical and Applied Chemistry.

SPECIAL COURSE.—A course in BIOLOGY, for the benefit mainly of Medical Students, is conducted partly by Lectures in University College, and partly by Practice in the School. The subjects of the former: Elementary Botany; Cryplogamic Botany ; Zoology ; Comparative Anatomy of Vertebrata. Of the latter : Elementary Practical Biology ; Advanced Course ; Specialized Course for Study of Vertebrate Anatomy ; Histology.

DIPLOMAS, ETC.—Diplomas are issued in each of the three Departments on a student's completing a regular course of three years. Certificates of attendance and standing are, on certain conditions, issued for any separate course or group of courses. In the Department of Engineering, the University of Toronto confers the Degree of C.E. on holders of the School's Diploma who have practised their Profession for three years after receiving such Diploma.

PRIZES. —Books to the value of $45 are awarded as prizes in each year of the course.

LABORATORY.—The Physical Laboratory is furnished with a large collection of apparatus for *Lecture* experiments in the Departments of Mechanics, Sound, Light and Heat. It is also well supplied with instruments for *individual* work in the same Departments. In addition, there are *special* laboratories which offer *unusual* facilities for conducting experiments in Sound and Heat. There is also *special* Optical room.

LIBRARIES, MUSEUMS, ETC.—The Library of the School is well provided with works bearing upon the more technical parts of the regular courses. The Library, Museums and Herbarium of the University of Toronto are open to regular students.

2. Ontario School of Art.

In the year 1875 a deputation from the Ontario Society of Artists waited upon the Hon. Mr. Crooks, Treasurer of the Province, to represent the public benefit that would result if an Art School were established in connection with their Society. The result of their application was a grant of $1,000, with the condition that at the commencement the Society would give the tuition without remuneration. The School opened in October, 1876, under the management of a Council composed of the Provincial Treasurer and six representatives of the Society. In the course of a few years the School was removed to the Education Department buildings, so that the teachers-in-training in the Normal School might avail themselves of its advantages and the objects of Art in the museum, which had been collected in 1855-58 by the late Chief Superintendent with that special object in view. [Ed. Report, 1858.] An arrangement was entered into between the Department and the Society, and classes were established specially adapted for mechanics, teachers, and Normal School students. The School opened in its new quarters on 10th October, 1882. After the fourth session, ending in April, 1884, the Society of Artists resigned its connection with the School of Art. It is now under the direction of the Minister of Education and is managed by a Superintendent.

Object of the School.—The aim of the School is to prepare such teachers as may be required for teaching Industrial Drawing in Public and High Schools, Mechanics' Institutes, and Industrial Art Schools; also to provide Technical Instruction and Art Culture to persons employed in the various trades, manufactures, etc., requiring artistic skill.

COURSE OF INSTRUCTION.

PRIMARY—GRADE B.

Freehand from the "Flat."	Linear Prespective.
Practical Geometry.	Model Drawing.

Memory and Blackboard Drawing.

Students must pass the necessary Examinations in two of these subjects before they can be permitted to study in the advanced classes.

SECOND, OR HIGH—GRADE A.

Shading from Flat Examples.	Advanced Perspective.
Outline Drawing from the "Round" (Casts or Nature).	Descriptive Geometry and Typographical Drawing.
Shading from the "Round."	Drawing from Dictation.
Drawing from Flowers and objects of Natural History.	Machine Drawing.
	Building Construction.

Industrial Design.

SPECIAL SUBJECTS.

Painting in Oil and Water Colors.	Wood Engraving, including Pictorial Work.
Modelling in Clay and Wax.	

Wood Carving.

CERTIFICATES.—A Proficiency Certificate is awarded for each subject. A Certificate, Grade B, entitling the holder to teach Drawing in High Schools, Model Schools, or Mechanics' Institutes, is awarded to a student who passes in *all* the subjects of the Primary Course. A Certificate, Grade A, is awarded to a student who passes in the *first eight* subjects of the Advanced Course. The holder is legally qualified to teach in an Art School.

MEDALS.—The Minister of Education presents a Gold Medal for the Advanced Course. Candidates must be *bona fide* students in regular attendance at the Ontario School of Art or the institution affiliated. A Bronze Medal is given for highest number of marks in Primary Grade B. A Bronze Medal is given to the student from a Mechanics' Institute who makes the highest marks in the same grade.

Summer Sessions.—Free Industrial Drawing Classes have been established for the benefit of High and Public School teachers during each summer vacation. The course consists of

Freehand Drawing from flat examples,
Practical Geometry,
Linear Perspective,
Model Drawing,
Blackboard Drawing from memory,
} Twelve lessons each,

for Grade B; and of

Shading from flat examples, 20 lessons;
Industrial Design, 15 lessons;
Machine Drawing, 15 lessons;
Drawing from Dictation, 10 lessons.

Affiliation.—Any college or private school may, for the purpose of taking the Departmental Examination, and with the consent of the Department, be affiliated with the Ontario School of Art. Several schools and colleges have already availed themselves of this privilege.

Local Art Schools.—By an Act passed in 1885, the Education Department was empowered to make regulations for the organization and management of local Art Schools; to prescribe a Curriculum of Studies for such schools, and, on examination, award Certificates valid in any municipality in the Province.

THE EDUCATIONAL MUSEUM.

In 1849 an Act was assented to, granting five hundred pounds per annum for the establishment and support of a School of Art and Design for Upper Canada. This fund was allowed to accumulate for several years, and, together with special grants, was expended in the purchase of a collection of objects of Art, which gradually increased so much in size that it became necessary to erect new school buildings and devote all the lecture rooms, etc., of the original Normal School building to the purposes of the museum.

The original plan of having a School of Art and Design was not carried out until 1882. In the meantime the museum was thrown open free to the public every day, except Sundays, and students from the city having art tastes have the privilege of copying from the paintings, statuary, etc. As an indirect aid to Art the museum has been very valuable, and the students of the Ontario School of Art have access to its examples for the purposes

The museum is a source of attraction to visitors. It contains:—

1. Plaster casts of Egyptian, Assyrian, Babylonian, Persian, Grecian and Roman statuary, antiquities.
2. Architectural sculpture, different periods.
3. Antique sculpture, statues, busts, etc.
4. Modern sculpture, statues, busts, etc.
5. Medallions and medals.
6. Bas-reliefs,
7. Copies of paintings of Italian, Flemish, Dutch, German, French and Spanish Schools.
8. Photographs of prehistoric Egyptian, Assyrian, Cyprian, Grecian, Etruscan, Roman, and other antiquities; illustrations of decorative art of different ages; views of cities; national historical portraits; British National Gallery paintings, etc., etc.
9. Engravings; etchings; chromo lithographs, etc.
10. British American collection of maps, charts, portraits, etc.
11. Reproduction in fictile ivory.
12. Electrotype reproductions.
13. Curiosities and antiquities, various.

The museum also contains a large collection of philosophical apparatus suitable for schools and colleges. It is representative, on a small scale, of the South Kensington Museum; and duplicate copies of plaster casts, drawings, etc., are loaned to other Art Schools throughout the Province.

3. Ontario Agricultural College and Experimental Farm.

This Institution, established in 1874, is situated near the City of Guelph, in the centre of an extensive agricultural and noted stock-raising district. The Farm consists of 550 acres, about 400 of which are cleared. It is composed of almost every variety of soil, consequently it is well suited for the purpose of experimental farming.

Objects.—Its objects are: (1) To give a thorough mastery of the practice and theory of husbandry to young men of the Province engaged in, or intending to engage in, Agricultural or Horticultural pursuits; and (2) to conduct experiments tending to the solution of questions of material interest to the Agriculturists of the Province, and to publish the results from time to time.

Matriculation.—The subjects are as follows: Reading, Writing and Dictation, English Grammar, Arithmetic—to the end of Simple Proportion; the outlines of General Geography, and the Geography of Canada.

Tuition Fees.—Residents in Ontario, with one year's apprenticeship, $20 a year; without the apprenticeship, $30. Non-resident, with one year's apprenticeship, $50; without apprenticeship, $100 for the first year, and $50 for the second. The charge for board, etc., is two dollars and a half per week, washing extra.

Labor.—All regular students are required to work in the outside departments—farm, live stock, garden, carpenter shop, and experiments, during the afternoon of every alternate day; and for one hour in the morning in the live stock department. This labor is paid for at a rate per hour, fixed by the Farm Superintendent and the payments are credited on board accounts.

COURSE OF INSTRUCTION.

I. Course of Study.

First Year—Subjects:

Agriculture.	Botany.
Live Stock.	Geology.
Inorganic Chemistry.	English Literature.
Organic Chemistry.	English Composition.
Veterinary Anatomy.	Book-keeping.
Veterinary Materia Medica.	Arithmetic.
Zoology.	Mensuration.

Second Year—Subjects:

Agriculture.	Entomology.
Live Stock.	Meteorology.
Dairying.	English Literature.
Arboriculture.	Political Economy.
Agricultural Chemistry.	Book-keeping.
Veterinary Pathology.	Mechanics.
Veterinary Surgery and Practice.	Levelling and Surveying.

Systematic and Economic Botany.

DEPARTMENTS OF INSTRUCTION.

I. Agriculture; II. Natural Science; III. Veterinary Science; IV. English, and Political Economy; V. Mathematics and Book-keeping.

II. Course of Apprenticeship.

In this Course there are five Departments, viz.:—1. The Farm Department; 2. The Live Stock; 3. The Horticultural; 4. The Mechanical; 5. The Experimental. The work is done by divisions, which work alternately in the afternoon and one hour in the morning with the live stock.

Special Classes.—A special class is organized in the fall for such students as wish to devote a few months to the study of live stock and veterinary science. The members of this class spend half of every alternate day and an hour every morning in working among the live stock, and the rest of the time in study. The work done by this class is not paid for. A special silver medal is awarded to the best second year student on reaching a certain standard.

Diplomas.—Diplomas admitting to the status of "Associate of the Ontario Agricultural College" are granted on certain conditions.

Medals.—Three medals are offered for competition among the students of the second year—the gold medal, the first silver medal, the second silver medal. The examinations for these medals are both written and practical.

VI. SCHOOLS FOR SPECIAL CLASSES.

I. Ontario Institution for the Deaf and Dumb.

In the year 1858, a Society was established in Toronto for the instruction of the Deaf and Dumb and of the Blind, the entire *control* being vested in a Superintendent under the direction of a *Committee*. The Course of Instruction, intellectual and mechanical, *was* under the guidance of a Master and Assistants, subject to the

Superintendent. The expenses were defrayed by private subscriptions, a small Government grant and grants from certain County Councils. At the end of the first year, there were 19 pupils in regular attendance. The first blind pupils were admitted in September, 1861.

In 1864 the Institution was removed to Hamilton, and placed under the supervision of a Board of Commissioners appointed by the Government. The instruction given to the blind was necessarily of a very elementary character, as there were no appliances for instructing them in industrial pursuits. The Institution was carried on until July, 1870, by Mr. J. B. McGann, the pioneer in the establishment of a school for the deaf and dumb.

In October, 1866, the Rev. Dr. Ryerson, Chief Superintendent of Education, was directed by the Government to make an educational tour in foreign countries, during which he was to collect information, etc., respecting schools for the deaf and dumb and the blind, as the Government contemplated establishing such schools in both Upper and Lower Canada, as an appropriation of $80,000 had been voted by Parliament in 1854, for the erection of schools for the educating conjointly of mutes and the blind.

Four years later, on the 20th of October, 1870, the Ontario Institution for the Education and Instruction of the Deaf and Dumb was opened at Belleville; the Principal, W. J. Palmer, Ph.D., and his staff of officers and teachers were installed, and during the first year 107 pupils were admitted, of which number 62 had not attended any school for the deaf and dumb, while 41 of the remaining 45 had attended Mr. McGann's school.

By Act of Parliament the Inspector of Prisons and Asylums has power to make such Rules and By-Laws as he may deem expedient for the government, discipline and management of the Institution, subject to the approval of the Lieutenant-Governor in Council.

The Institution is open to all deaf mutes from seven to twenty years of age, who are not deficient in intellect and are free from contagious disease. The period of instruction, except in special cases, is limited to seven years. No charge is made for Tuition and Instruction, but parents who are able to do so are charged $50 a year, while Non-Provincial pupils are admitted for $125 a year.

The course of instruction is both scholastic and industrial. In the former the work is, on the whole, analogous to that done in the Public Schools of the Province, due allowance being made for difference, not so much in the mental capacity of the pupils as in the difficulty of teaching the subjects. The modes of instruction employed are the Manual Alphabet, Signs, Writing, and Articulation or Visible Speech. In fact, the system may be termed the "combined system," and it has been found to be most practical and productive of useful results. The pupils are urged to use "articulation" instead of "signs," whenever it is possible to do so, and the greatest pains are taken to train them to express their thoughts in written words, accurately used and spelt. The yearly examination of the pupils is made by Dr. Carlyle, an experienced master from the Normal School. From the reports laid before Parliament it is pleasing

learn that the interests of these "children of silence" are so faithfully and earnestly ministered to. In the Industrial Department both classes are provided with instruction and work. The boys are instructed in cabinetmaking, carpentering, shoemaking and tailoring; while the girls are taught to sew, to make dresses, to do fancy work, and are trained in household duties.

Since the Institution was opened in 1870 not fewer than 700 have enjoyed its benefits.

2. Ontario Institution for the Education of the Blind.

The beginning of this Institution, which has now assumed so high a position, was extremely humble. In the year 1861, Dr. Beverley Morris, who was for a short time Superintendent of the "Society for the Instruction of the Deaf and Dumb and the Blind," which was established in 1858, received among the pupils four who were blind. Although the appliances for teaching were very meagre, substantial progress was made. As has been stated in the sketch of the "Institution for the Deaf and Dumb," the Institution was removed to Hamilton under Mr. J. B. McGann. The Institution in its present form, like the sister institution for the deaf and dumb in Belleville, was, in consequence of the Legislative Grant made in 1869, established in the city of Brantford, in the year 1872, for the education and training of the blind youths of the Province, between the ages of seven and twenty-one years, who are not disqualified through disease or mental incapacity. It is intended to be supplementary to the Public School System of the Province, and admits those whose sight is so defective or impaired as to prevent them from receiving education by the ordinary methods. It is not necessary, therefore, that a youth should be totally blind in order to be entitled to the benefits of the Institution.

COURSE OF INSTRUCTION.

The pupil is taught Arithmetic, Grammar, Geography, Reading, Writing, and, at a more advanced stage, English Literature and History. He is instructed in the use and form of common objects, in Natural History and Physiology, and sometimes Popular Chemistry is also taught. In many of these subjects pupils attain a high degree of proficiency.

Reading is taught by the use of embossed type traced by the fingers; Writing with the aid of a grooved card, which acts as a guide to the hand; Geography by the agency of dissected maps; Natural History by handling models or stuffed specimens of birds, animals or fishes. A system known as the Point Print Cypher, written with the assistance of a stylus and a brass guide, is used for correspondence, for music writing, and for copying books and documents.

Concurrently with this course the pupil is, where his ability justifies it, introduced to the study of music, including lessons on either the Pianoforte, Organ or Violin, or on more than one of those instruments, if a special talent be exhibited. Where the voice is susceptible of successful cultivation, the pupil receives careful instruction in Vocal Music. Advanced music pupils are also instructed thoroughly in Harmony, Counterpoint and the Theory of Music. If a male pupil possesses a correct ear and other qualifications likely to fit him for the business of a pianoforte tuner, he enters the tuning class and receives a regular course of instruction in that branch of training. On graduating from the tuning class the pupil receives a complete outfit of tools valued at about thirty dollars.

With male pupils, whose circumstances require them to pursue an industrial calling, the willow shop, where chair and basket making are taught under a competent trades instructor, is the usual resource. In four or five sessions an intelligent youth may graduate as a competent workman, quite able to earn a comfortable living by his own industry. If his record is good, the willow shop graduate, on leaving, receives an outfit of tools, models and material worth from eighty to one hundred dollars.

Of the female pupils all are instructed in hand-sewing, hand-knitting, and the use, with all their respective attachments, of the sewing and knitting machine. In the sewing-room apt pupils readily qualify themselves for undertaking almost any ordinary description of needlework, and some for cutting out work. In the knitting branch, the knitting machine affords to many, after leaving the Institution, a means of providing their own income.

To compensate to some extent for the lack of robust exertion the pupils are drilled in calisthenic exercises, which have a very beneficial effect on both their health and deportment.

The pupils have access to a good library of embossed books, which are being always added to, and their annual prizes are usually in this form.

The religious and moral training of the pupils receive careful attention. They meet morning and evening for devotional purposes. On Sunday morning they attend, under guidance, their respective places of worship. In the afternoon religious services are held in the Institute.

VII. INSTITUTIONS PARTLY AIDED BY GOVERNMENT.

I. The Canadian Institute, Toronto.

The Canadian Institute, like many other societies of a similar character, dates its origin from a small beginning. A few individuals connected with the surveying and engineering professions formed the original Society, consisting of gentlemen engaged in these pursuits, in 1849; but it was not of very vigorous growth. New life, however, was infused by the granting of a Royal Charter, which decreed that the Director of the Geological Survey of Canada —afterwards Sir W. E. Logan—should be the first President. By virtue of this charter the hitherto strictly professional character of the Institute was changed to one of a general description, viz., promoting the physical sciences, encouraging and advancing the industrial arts and manufactures, the formation of a Provincial Museum, and facilitating the acquirement and the dissemination of knowledge connected with the surveying, engineering, and architectural professions. In 1852 the Institute began to issue a monthly paper, *The Canadian Journal*, the publication of which is still continued. In it are published the proceedings of the Society, the papers read before the members, and original communications, together with selected articles. In 1855 the Institute and the Toronto Athenæum united, and by this amalgamation the valuable library and collection of *minerals belonging* to the latter Society was transferred to *the Institute. Another* Society, "The Natural History," is on the *eve of uniting with* the Institute, and will form the biological *branch thereof.*

2. L'Institut Canadien Francais de la Cite d'Ottawa.

This purely literary Institution was founded by the leading French-Canadian residents in the city of Ottawa in the year 1852. What this body aims at is the union and the intellectual progress of its members and their advancement in literary pursuits. There are three classes of members—active, honorary, and corresponding. All active members are of French origin, and they must enjoy an indisputable reputation for honor. Honorary members are chosen from among dignitaries and persons who have materially helped the Society. Corresponding members are those who have contributed by their writings, lectures, etc. The present active membership is 322; honorary, 80; corresponding, 15. The Institute occupies a building of its own, which, together with the site, is valued at $23,500. A library of over 500 volumes, and a reading room containing 40 daily and weekly newspapers and periodicals, are valuable adjuncts. For many years gratuitous instruction was given in mineralogy and kindred subjects; Dramatic and Debating Clubs flourished, and the addition of an Art School has made the Institution pretty perfect. The public lectures are of a varied character.

3. Mechanics' Institutes.

By the Act of 1880, Mechanics' Institutes, which had been established as far back as the year 1830, were placed under the supervision of the Department of Education, having formerly been under the control of the Commissioner of Agriculture. The primary objects of the Institutes were to form a Library and Reading Room and to organize a system of instruction by means of Lectures and Classes. The officers consist of a President (who shall be *ex officio* a director), Secretary, Treasurer, and a Board of Directors of not fewer than five or more than nine (exclusive of the President), and such other officers as may be designated in the by-laws of the corporation.

Conditions for Receiving the Government Grant.—It is the duty of the Directors in order to be entitled to any portion of the appropriation made by the Legislative Assembly for Mechanics' Institutes:—

1. To see that such Institute is incorporated according to the provisions of this Act or some former Act; 2. To establish a Library containing books on Mechanics, Manufactures, Agriculture, Horticulture, Philosophy, Science, the Fine and Decorative Arts, History, Travels, Poetry, Fiction and Biography; or 3. To open a Reading Room; or 4. To organize Evening Classes for instruction in one or more of the three following courses, namely, an English Course, comprising the study of English and Canadian History, English Grammar and Composition; a Commercial Course, comprising the study of Book-keeping, Arithmetic and Writing; a Drawing Course, comprising the study of Freehand, Architectural and Mechanical Drawing; 5. To report before the 1st of May, in each year, to the Education Department, in such form as may be prescribed by the Minister of Education.

Distribution of Government Grant.—The appropriation annually made by the Legislative Assembly for Mechanics' Institutes is distributed, subject to the regulations of the Education Department, as follows:—

(*a*) Every Institute with a membership of fifty persons, and contributing in annual subscriptions the sum of twenty-five dollars, receives twenty-five dollars

annually. (*b*) Every Institute with a membership of one hundred or over, and contributing in annual subscriptions not less than fifty dollars, receives fifty dollars annually. (*c*) In addition to the sums in the preceding sub-sections mentioned, every Institute receives for its Library the sum of one dollar for every dollar expended on books as provided by this Act, but so as not to exceed the sum of one hundred and fifty dollars for Library purposes; for its Reading Room the sum of one dollar for every dollar expended for newspapers, magazines or other periodicals, but so as not to exceed the sum of fifty dollars for Reading Room purposes; for Evening Classes the sum of three dollars for every pupil in any of the courses herein prescribed for classes of twenty-five pupils, and one dollar for each additional pupil, but so as not to exceed one hundred dollars in all for Evening Classes.

Power of the Education Department.—The Education Department has power in respect of the following matters:—

1. To make regulations for the management and inspection of Mechanics' Institutes, Libraries, Reading Rooms, and Evening Classes and Art Schools, and for the auditing of all accounts appertaining thereto. 2. For the payment of such inspection either by the Public School Inspector or otherwise, a sum not exceeding $10 for every Institute or Art School inspected.

STATISTICS OF THE MECHANICS' INSTITUTES IN ONTARIO FOR 1885.

Number of Institutes reporting.	Number not reporting.	New Institutes.	Institutes with Elementary Classes.	Institutes with Drawing Classes.	Institutes whose Students received Certificates.	Finances.		Number of Members.
						Receipts.	Expenditures.	
122	19	6	19	43	35	$117,600 39	$117,931 62	16,259, being an average of 138 to each Institute.

4. Ontario Society of Artists.

By an Act of Parliament passed in 1877, this Society, which had been established in 1872, for the encouragement and fostering of Original Art in the country, was empowered to make by-laws for the admission of members, for the conduct and management of the Canadian Art Union, and the promotion of any objects consistent with the study of Art.

School of Art.—A School of Art in connection with the Society was established in 1875 (see page 49). The Society managed this school until 1884, when it passed entirely under the control of the Education Department.

OPERATIONS OF THE SOCIETY.

EXHIBITION.—There is an annual exhibition of the work done by the artists who are members of the Society. Besides the regular exhibition, the Society frequently has loan exhibitions of European and American artists.

LIFE CLASS.—Art students are admitted to study in this class, free of charge, upon showing sufficient ability by drawing from the cast.

5. Local Art Schools.

1. The London Art School.
2. The Ottawa Art School.
3. The Kingston Art School.
4. The Hamilton Art School.

These Schools, which are now affiliated with the Ontario School of Art, Toronto, have each of them a Board of Directors of its own, but the course of instruction is the same as that pursued in Toronto. In consequence of this affiliation the students enjoy the same privileges as the Toronto students, are eligible for certificates, and may compete for the medals.

In addition to the medals mentioned in the preceding paragraph, the Board of Arts and Manufactures, Toronto, has decided to give a special medal to each of the Art Schools in the Province for certain specific work. Three out of the four offered for competition have been awarded: One to Toronto, one to Kingston, one to Ottawa.

The result of the last examination is given in the following table:

School.	When established.	Teaching Certificates.		Proficiency Certificates.
		Grade A.	Grade B.	
Ontario School of Art	1875	1	2	195
The London Art School	1878	1	1	59
The Ottawa Art School	1879	....	....	85
The Kingston Art School	1884	....	2	159
The Hamilton Art School	1886	....	....	....
Other Institutions in affiliation ..	....	....	28	1980

Grants.—Every Art School incorporated under the Act of 1886 or any other Act, and complying with the Regulations of the Education Department respecting the equipment, accommodation and teachers required for Art Schools, shall be entitled to receive out of any moneys appropriated by the Legislative Assembly for Art purposes a fixed grant of four hundred dollars, and such additional sums for proficiency in Art studies as may be determined by the regulations of the Education Department respecting final examinations.

6. The Entomological Society of Ontario.

In the year 1863, a number of students of Practical Entomology (under the Presidency of the late Dr. Croft, Professor of Chemistry in the University of Toronto) formed the Entomological Society of Canada. Their early years were at first published in the Canadian *Journal*, issued by the Canadian Institute. In 1868, however, the

first number of the *Canadian Entomologist* was issued, under the editorship of the Rev. C. J. S. Bethune, M.A., the present Head Master of Trinity College School, Port Hope. The Council of the Arts and Agricultural Association granted the sum of $500 on condition that the paper be continued. A report on insects injurious or beneficial to agriculture, and a small cabinet of insects, were placed at the disposal of the Council. After the Confederation of the Provinces in 1867, the Society was incorporated, and a grant of $1000 dollars a year was placed at its disposal, on conditions similar to those given above.

In 1876 the Society made, at the Centennial Exhibition in Philadelphia, the most complete exhibit of North American insects ever brought together, and they received a Gold Medal on that account. In 1882 a similar collection of insects injurious to fishes, as well as those which serve as food for fishes, was sent to the International Fisheries Exhibition in London. The present "Indian and Colonial Exhibition" has a large representative collection.

7. Ottawa Literary and Scientific Society.

The Literary and Scientific Society of Ottawa was incorporated in 1869, which empowered the Mechanics' Institute and Athenæum (established in 1849) and the "Natural History Society" to unite under a new name. The former of these Societies was in possession of a good reading-room and library. It had also been in receipt of an annual grant of $300 from the Ontario Government. The Natural History Society had already done good work in the study of nature, and possessed a museum and library. The work of these two Societies—one somewhat popular in its nature, and the other more strictly scientific—has been continued in a certain measure by the new Society. It has maintained classes of instruction, as well as courses of lectures at different times by many of the foremost men in Canada. During the past two years, through the liberality of friends, the Society has been able to apply about $600 to the purchase of books. The number of volumes at present on the shelves is over 2,100. The library is much used by the members, and, as it consists mainly of high class works of literature and science, must be regarded as a very useful educational medium. The museum comprises some valuable collections, chiefly mineralogical, botanical and entomological. The number of members at present on the Society's book is over 350, and the annual subscription is fixed at the very low rate of $2.

8. The Hamilton Association.

This Association was established in 1857 and incorporated in 1883. Its objects are the formation of a library, museum and art gallery; the cultivation of literature, science and art, and the illustration of the natural history and physical characteristics of the country. It is composed of three classes of members—honorary, ordinary and corresponding members. With a view to afford fuller opportunities and facilities of meeting and working together, sections are established in seven different branches of science, with a President and a Secretary for each. A "Journal and Proceedings of the Hamilton Association" is published yearly.

VIII. UNIVERSITIES AND COLLEGES NOT UNDER PROVINCIAL CONTROL.

I. UNIVERSITIES.

1. Victoria University.

The existence of this University is due to the efforts of the Conference of what was formerly known as the Wesleyan Methodist Church. During the years 1828 and 1829 plans were devised for the establishment of an Academy for the superior education of both sexes. The town of Cobourg was selected as the site. The work of building was commenced in 1832, chiefly through the exertions of Rev. Egerton Ryerson. The buildings were completed in 1836, when "Upper Canada Academy" was formally opened, being the first Academy of Education established in Upper Canada by voluntary contributions. In October of this same year a Royal Charter of incorporation was obtained in England by Rev. Dr. Ryerson. In 1841 the Canadian Parliament passed an Act altering the constitution of the Academy and establishing it as a University under the title of "Victoria University at Cobourg." Thus Victoria has the honor of being the first institution incorporated by the Canadian Parliament with University powers. It was also the first institution in Canada for the higher education of both sexes; and the first degree in Arts was conferred by it in 1846. The College opened with the Faculty of Arts; in 1854 Medicine was added; in 1862 the Faculty of Law, and in 1872 that of Theology.

In 1874 the Charter granted by King William and all the Acts of Parliament relating to it were repealed, and the appointment of the Board was entrusted to the General Conference of the Methodist Church of Canada. In 1879 this Act was amended, and representation on the Senate was granted to registered Alumni. In 1883 an Act was passed altering the constitution of the College Board and providing for representatives of the graduates being placed upon it. In 1884, after the Union of the different Methodist bodies, the name of the College was changed to "Victoria University," the representation of Alumni was increased, the President of the University was constituted Chancellor, and a Vice-Chancellor was to be elected every two years by the graduates. Albert College was also affiliated with the University.

Governing Body.—The University is governed by a Board of Regents, composed of the General Superintendents of the Methodist Church, the Chancellor and the Vice-Chancellor, twenty-four members appointed by the General Conference, and seven members appointed by the graduates. This Board appoints the President, who is *ex-officio* Chancellor, and the Professors of the different Faculties. It is a body corporate with all the powers of management and administration of the University, except such as are vested in the Senate.

The Senate.—This body consists of the Board of Regents, the Professors of the various Faculties, eight representatives of the graduates, in addition to the representatives on the Board, and one or more representatives of each affiliated College, according to the terms of affiliation. This body confers degrees in the several Faculties, prescribes the course of studies and qualifications for degrees, and determines all matters relating to the work of education in the University.

Convocation.—Convocation consists of the Senate and registered Alumni. It meets in the month of May for the public conferring of degrees, the electing of the Vice-Chancellor (every two years) and the representatives on the Board and the Senate.

Affiliated Institutions.—Albert College, Belleville; the Wesleyan College, Stanstead, Province of Quebec; the Wesleyan Theological College, Montreal, P.Q.; the Toronto School of Medicine and the School of Medicine and Surgery, Montreal.

FACULTIES.—The Faculties are those of Arts, Science, Medicine, Law and Theology.

ARTS COURSE.—The Course of Study in the Faculty of Arts pursued in the College extends over four years, called respectively Freshman, Sophomore, Junior and Senior. It embraces the following departments: Classics, Mathematics, English History, Modern Languages (French and German), Oriental Languages (Hebrew, Chaldee and Syriac), Natural Science, Philosophy, Logic, and Civil Polity.

SCIENCE COURSE.—The Course of Study in the Scientific Department embraces the following subjects: Mathematics, Botany, History, English, French, German, Physics, Logic, Apologetics, Political Economy, Inorganic Chemistry, Biology, Mineralogy, Geology, Assaying, Philosophy, Civil Polity, Astronomy, Determinative Mineralogy, Ethics, and Natural Theology. (NOTE.—A special course of summer lectures is given.)

MEDICAL COURSE as prescribed by Toronto School of Medicine and the Ecole de Médecine et de Chirurgie, Montreal.

LAW COURSE extends to four years and embraces the usual subjects of such a course.

THEOLOGICAL COURSE.—The subjects in this Faculty comprise Apologetics, Systematic Theology, Biblical Theology of the Old Testament, Exegesis, Old and New Testaments, Biblical Theology of the New Testament, Homiletics and Pastoral Theology, Church Polity.

MEDALS.—Gold and silver medals are given at the end of the course to the best honor men who reach a certain standard in each of the following departments: Classics, Mathematics, English and Modern Languages, Natural Science, Philosophy, Logic and Civil Polity. The medals founded by His Royal Highness the Prince of Wales are awarded to the two competitors who obtain the highest standing at a final examination in subjects named from year to year. In order to be qualified as competitors, the candidates must, during their undergraduate course, have taken honors each year in a specific department.

SCHOLARSHIPS.—Several Districts in the various Conferences have established scholarships of the value of $25 each, some of which are open to competition at matriculation and others at graduation.

PRIZES.—In addition to these medals and scholarships, there are a number of prizes in books, founded by different friends of the University. They are awarded from year to year for the same subjects, which are clearly specified.

DEGREES.—*The degrees* granted in the different Faculties are as follows:—*Arts*—B.A., M.A.; *Science*—B.Sc., Ph.D.; *Law*—LL.B., LL.D.; *Medicine*—*M.D., C.M.; Theology*—B.D., D.D.

Statistics of the University of Victoria College, Cobourg, 1885.

Name and Locality.	Date of Establishment or Incorporation.	Annual Income.	Sources of Income.	Amount of Endowment.	Capital invested in Buildings and Lands.	Number of Professors.	Number of Tutors or Lecturers.
Victoria University, Cobourg.	1836, as U. C. Academy, by Royal Charter. 1841, by Statute as a University.	$20,000.	Endowment, Fees, and Collections.	$200,000	$70,000	10	....

Faculties.	Length of Course.	Number of Students in each Year of Course.	Number of Graduates.	Schools connected with Institution.
I. Arts. II. Theology. III. Medicine. IV. Law. V. Music.	Degrees granted in all these Faculties. — 4 Years.	First Year ..... 45 Second " ..... 40 Third " ..... 13 Fourth " ..... 24 Special Subjects ..... 47 Professional Students ..... 280 Total 449	Arts ..... 463 Medicine ..... 1179 Law ..... 88 Science ..... 10 Theology ..... 54 Music ..... 2 Total 1796	1. Albert College. 2. The Wesleyan College, Stanstead, P.Q. 3. Toronto School of Medicine. 4. Montreal School of Medicine and Surgery. 5. Wesleyan Theological College, Montreal.

Laboratories.				Apparatus.		Number of Volumes in Library.	Museum and its Nature.
Chemical.	Physical.	Mechanical.	Other.	Kind.	Value.		
One.	One.	....	Mineralogical.	1. Chemical. 2. Physical. 3. Astronomical.	$4,000.	$5,000.	1. Geological. 2. Mineralogical. 3. Archæological.

2. Queen's University, Kingston.

This educational institution, situated in Kingston, was originally the College of the "Presbyterian Church of Canada, in connection with the Church of Scotland." The members of the Presbyterian Church in Upper Canada began in 1835 to agitate in favor of the establishment of a Theological Seminary for the training of young men for the ministry. As no institution for Arts training, open on equal terms to all the public, was as yet available in the Province, the Synod of the Presbyterian Church took definite steps in 1839 for the founding of such an institution. A Provincial Charter was obtained in 1840, incorporating the University of Kingston; but this Act was subsequently annulled by the Imperial authorities, and in lieu of it a Royal Charter was granted in 1841, conferring on the institution the name of "Queen's College." The new College building is of stone, and was erected within the last ten years, mainly through the energy of the present Principal, the Very Rev. G. M. Grant, D.D. It is fully equipped with laboratories, museums, and a well-stocked library. In addition to these, the Kingston Astronomical Observatory, which had been built in 1855 by private subscription, aided by the City Corporation, was in 1861 conveyed by deed to the College, on condition that the College give, every year, a course of not fewer than six popular lectures on astronomy, open to the public. This Observatory is one of those which are connected with the Magnetical Service of the Dominion—the head-quarters of which are at Toronto. The other is at Montreal.

The Council.—This body consists of the Chancellor, the Trustees, twelve ministers of the Presbyterian Church in Canada, and fifteen laymen in full communion; the Senate, *i.e.*, the Principal and all the Professors, and thirty-three members elected by the registered graduates.

Trustees.—At the time of the union between the different Presbyterian bodies of Canada, and of the formation of the "Presbyterian Church in Canada," Queen's University became, in 1874, by Act of Parliament, the College of that Church; the Board of Trustees was made self-perpetuating, instead of being appointed as heretofore by the Synod, and they were empowered to appoint a Vice-Principal to take the place and discharge the duties of the Principal in his absence.

Convocation and Council.—By this same Act Convocation was organized and a Council established, having power to pass by-laws for the registration of graduates, for the appointment of officers, and for the election of a Chancellor, who is elected by the Council if there is but one candidate; otherwise he is elected by the registered graduates and alumni.

Senatus.—The members of the Faculties of Theology and Arts *form one Board, with the title* "Senatus." This Board awards the *scholarships and apportions* the Bursary Fund.



Faculty Boards.—The Professors of each Faculty meet as a Board and administer the affairs of the Faculty.

Affiliated Institutions.—The Royal College of Physicians and Surgeons and the Women's Medical College, both situated in Kingston, are affiliated with this University. Before this latter was established, the Medical Faculty of Queen's College (its forerunner, or predecessor) was the first to admit women (equally with men students) to the medical lectures of the College.

FACULTIES.—When the College opened in 1842 there were but two Faculties—Arts and Theology—to which the teaching work was confined. In the year 1854 the Faculty of Medicine was added, which afterwards (1866) became a separate corporation under the name of the "Royal College of Physicians and Surgeons." The Faculty of Law was added in the year 1860.

COURSE OF STUDY.—*Arts*—Classics, Mathematics, Mental and Moral Philosophy, Political Economy, Chemistry, Natural Science, History, Rhetoric, English Literature and Modern Languages. *Medicine and Law*—The usual courses as generally prescribed. *Theology*—The Inspiration and Authority of the Scriptures, Systematic Theology, the Pastoral Office, Homiletics, Hebrew and Chaldee, Apologetics, Biblical Criticism, Church History.

DEGREES.—A complete curriculum of study in these four Faculties, covering a period of four years, leads to the usual degrees—in Arts, B.A. and M.A.; in Law, of LL.B.; in Medicine, of M.D.; and in Theology, of B.D. The degree of D.Sc. is conferred on Masters of two years' standing who shall have taken first-class honors in any two departments of the honor course—Literature, Philosophy, Mathematics and Science. The honorary degrees of D.D. and and LL.D. are given for literary, scientific or professional distinction.

SCHOLARSHIPS.—Of these there are two classes—in Arts and in Theology. In each class there are two kinds—matriculation and sessional examination scholarships; the former tenable during the first session, the latter during the following session.

BURSARIES.—Besides the scholarships—a few of which are close, *i.e.*, tenable only by students having in view the ministry of the Presbyterian Church—there are Bursaries, which are awarded to Divinity students who have not obtained scholarships.

PRIZES.—The University prizes are money prizes for literary articles, essays, etc.

MEDALS.—Gold and silver medals are also awarded to successful candidates after examination in various subjects—Classics, Physics, Mathematics, etc.

Statistics of Queen's University, Kingston, 1885.

Name and Locality.	Date of Establishment or Incorporation.	Annual Income.	Source of Income.	Amount of Endowment.	Capital invested in Buildings and Lands.	Number of Professors.
Queen's University, Kingston.	1841, By Royal Charter.	$29,615.	1. Interest on Endowment ..... $13,644 2. Annual Subscriptions ..... 7,330 3. Fees ..... 3,843 4. Presbyterian Church ..... 2,298 5. Temporalities Board ..... 1,950 6. Dominion Government, for Observatory.. 500	$225,000.	$135,000.	10

Number of Tutors or Lecturers.	Faculties.	Length of Course.	Number of Students in each Year of Course.	Number of Graduates.	Schools connected with Institution.
14	I. Arts ..... 4 years. II. Theology ..... 3 " III. Medicine..... 4 " IV. Law ..... 3 "		First Year..... 90 Second " ..... 80 Third " ..... 74 Fourth " ..... 67 Special Subjects ..... 43 Total..... 354	Arts ..... 380 Medicine ..... 385 Law ..... 26 Science..... 5 Theology..... 51 Total 847	1. Royal College of Physicians and Surgeons, Kingston. 2. Kingston Women's Medical College, Kingston.

Laboratories.				Apparatus.		Number of Volumes in Library.	Museum and its Nature.
Chemical.	Physical.	Mechanical.	Other.	Kind.	Value.		
Two.	One.	One.	One, Natural History.	1. Chemical. 2. Physical. 3. Natural History.	$7,500.	15,000.	1. Botanical Collection (very full). 2. Geological. 3. Mineralogical. 4. Zoological. 5. Archæological. 6. Numismatic. 7. Ethnological.

3. University of Trinity College, Toronto.

The immediate cause of the founding of this College and University was the suppression, in 1849, of the Faculty of Divinity in King's College, now the University of Toronto. In consequence of this the Right Rev. J. Strachan, D.D., Bishop of Toronto, issued, in February, 1850, a pastoral appeal to members of the Church of England for funds to enable him to establish a Church University and College. In response to this pastoral liberal contributions were made in Canada, and additional aid was obtained from England by the venerable Bishop himself.

Incorporation.—By a Provincial Act the College was, in 1851, constituted a corporate body; the Corporation consisting of the Bishop of Toronto and the Bishops of the various Dioceses into which the original Diocese of Toronto was divided, the Trustees of the College and the College Council.

Foundation and Inauguration.—The foundation of the College was laid on April 30th, 1851, and on the 15th of January, 1852, the inauguration took place, just ten years after the establishment of the Diocesan Theological College at Cobourg, which now became merged in Trinity College.

Royal Charter.—On the 16th of July, 1852, the University was constituted by Royal Charter and was endowed with power to confer degrees in the several Arts and Faculties.

Faculties.—At the time of the inaug uration, the Faculties of Arts Divinity, Medicine and Law were instituted with Professors and a course of study in each. That of Music was added subsequently. The College Lectures now embrace the first two only, provision being made for University Examinations in the other Faculties.

Governing Body, or Corporation.—This body is composed of the Bishops of the five dioceses: Toronto, Huron, Ontario, Niagara, and Algoma; the Trustees of the College, three in number, who are elected by the Corporation and the Council of the College. The four Bishops, of Toronto, Huron, Ontario, and Niagara, each nominate four members, and each affiliated Institution nominates one member. Fifteen members are elected, eight by the same registered members of Convocation as elect the Chancellor, and the other seven by the Corporation.

Committees of Corporation.—These Committees are (1) The Land and Finance Committee; (2) the Committee on the Curriculum; (3) the Committee of Discipline. These Committees advise the Corporation on the Studies of the College and the Curriculum of the University, etc. On the recommendation of the Board of Studies in each department, they fix, from time to time, the selected thors, subjects, etc.

Boards of Study.—Each Faculty—Divinity; Arts, under the Departments "Litteræ Humaniores" and "Mathematics and Physical Science;" Law; Medicine; Music—has a Board which advises with the Curriculum Committee.

Convocation.—This body consists of the Chancellor, the Provost, the Professors, all M.A.'s, and all graduates in Divinity, Law, and Medicine who, from the time of their admission to such degree, shall have paid annually the sum of five dollars for and towards the support and maintenance of the College. It meets twice a year; once for the granting of General Degrees and once for granting degrees in Medicine.

FELLOWSHIPS.—The Fellows are Graduates in Honors appointed and removed by the Corporation. They reside within the College, and teach in their specific department and assist in the maintenance of discipline within the College. No fellowship is tenable for a longer period than five years, but any fellow may be re-elected.

DEGREES.—*Arts*—In the Faculty of Arts, the Course of Study, as in the English Universities, extends over three years. University Examiners are appointed annually in the various departments of the different Faculties. Divinity and Classics, Latin and Greek, are compulsory subjects in each year. For women, who are now admitted to the various examinations and degrees in Arts, Music, and Medicine, alternative examinations have been provided in Arts, in which German or Italian may be substituted for Greek, and Harmony for Mathematics. *Divinity and Music*—The degrees of B.D. and D.D., as also those of Mus. Bac. and Mus. Doc., are conferred on Candidates after having passed a series of examinations in each subject. The degree of Licentiate in Theology is also conferred. *Law*—The degrees conferred in this Faculty are B.C.L., and D.C.L. By Statute this latter degree is the only Honorary Degree conferred by the University. *Medicine*—In this Faculty the degrees are M.B., M.D., and C.M. Candidates are required to have attended four years' Medical Lectures and Hospital Clinics, and to have passed two University Examinations and one Examination at a Medical School.

SCHOLARSHIPS.—Three Scholarships, of the value of $200, $140 and $100 respectively, are awarded for general proficiency at matriculation. At the end of the first year, two Scholarships, each of the value of $160, are given for Honors in Classics and Mathematics respectively, and three of $50 each for (1) Divinity and Hebrew; (2) Physical and Natural Science; (3) French and German.

A Bishop Strachan Jubilee Scholarship (founded to commemorate fifty years of ministerial labor) is awarded to the most deserving Bachelor of the year who intends to be a candidate for Holy Orders. Annual value $160, tenable for two years. There are also an Organist Scholarship, and a Cooper Exhibition open for competition.

PRIZES AND MEDALS.—Prizes in books are awarded to the Bachelors standing highest in Classical and Mathematical Honors in the Arts Course and for special subjects in the Theological Course. The Medals are the Governor-General's Silver Medal; a Gold and a Silver Medal in Law; a Gold and a Silver Medal in Medicine.

EXAMINATION CENTRES.—Besides the Examination in Music at Hellmuth Ladies' College, Examinations in the Faculty of Music are conducted in London, England, and in the Faculty of Divinity, in Melbourne, Australia, on the same papers and at the same time as the Candidates who present themselves in Toronto.

Statistics of the University of Trinity College, Toronto, 1885.

Name and Locality.	Date of Establishment or Incorporation.	Annual Income.	Sources of Income.	Amount of Endowment.	Capital invested in Buildings and Lands.	Number of Professors.
University of Trinity College, Toronto.	1851, as a College. 1852, by Royal Charter, as a University.	$26,400.	1. Endowments ..... $16,500 2. Students' Fees for Residence and Tuition 7,500 3. Fees for Examinations and Degrees 2,400	$300,000, in Lands and Securities.	Buildings. $150,000 Lands.... 200,000 $350,000	6

Number of Tutors or Lecturers.	Faculties.	Length of Course.	Number of Students in each Year of Course.	Number of Graduates.	Schools Connected with Institution.
5	I. Arts ..... 3 Years. II. Theology ..... 2 " III. Medicine IV. Law V. Music (Degrees granted in all these Faculties.)		Arts— Men. Women. First Year ..... 15 8 Second " ..... 11 Third " ..... 5 — 39 Theology— First Year ..... 2 Second " ..... 8 — 10 Law— Second Year ..... 13 Third " ..... 16 — 29 Medicine— Second Year ..... 45 Third " ..... 33 Fourth " ..... 35 —113 Music— Second Year ..... 48 Third " ..... 3 — 51 Total of Undergraduates 242	Arts ..... 290 Medicine ..... 403 Law ..... 19 Divinity ..... 14 Music ..... 1 Licentiates in Theology ... 6 Total number of Graduates 733	1. Trinity Medical School, Toronto. 2. Women's Medical College, Toronto. 3. Trinity College School, Port Hope. 4. Bishop Strachan School for Girls, Toronto. 5. Hellmuth Ladies' College, London, a centre for musical examinations.

Laboratories.				Apparatus.		Number of Volumes in Library.	Museum and its Nature.
Chemical.	Physical.	Mechanical.	Other.	Kind.	Value.		
One.	One.	....	....	1. Electrical. 2. Chemical and General. 3. Physical.	$2,500.	7,500.	Permanent Museum to be erected. The collection is at present housed in the College buildings. The collection embraces the following specimens:— 1. Zoological (chiefly Canadian). 2. Mineralogical. 3. Geological.



4. The College of Ottawa.

This College, conducted by the Oblate Fathers of Mary Immaculate, was established in the year 1848, by the Right Rev. Bishop J. E. Guigues, O.M.I., D.D., under the name of College of Bytown. It was then entrusted to the care of the Very Rev. Father Tabaret, O.M.I., D.D. (recently deceased). In the year 1866 the name was changed to the "College of Ottawa," and university powers were conferred. Besides the usual Arts degrees, the College is empowered to confer the degrees of Bachelor and Doctor in Science and Music, together with the degrees of Civil Engineering, Mining Engineering, and Mechanical Engineering.

COURSES OF STUDY.—The programme of studies embraces four distinct courses:

I. The Commercial Course. II. The Classical Course. III. The Scientific Course. IV. Course of Civil Engineering.

APPLIANCES.—Two Laboratories, well arranged and equipped—Chemical and Physical—contribute materially to the successful prosecution of their studies and to investigations by the students.

EXAMINATIONS.—The Examinations in this Institution differ somewhat from those of kindred establishments, as the *Matriculation* Examination takes place at the end of the third year of the Classical Course; the *Intermediate*, at the end of the fifth; the *Final*, at the end of the seventh.

PRIZES AND MEDALS.—In addition to First and Second Prizes in the various subjects of the different courses, ten Silver Medals are annually awarded.

DEGREES.—The degrees conferred by this College, under its Act of Incorporation as a University, are Bachelor of Literature (B.L.), Bachelor of Science (B.Sc.), Bachelor of Arts (B.A.), and Master of Arts (M.A.). The degree of B.A. is the highest of the three baccalaureates, and includes the two others. The degree of M.A. is conferred two years after that of B.A., when the President is satisfied of the qualification of the candidate for that degree.

Statistics of the College (University) of Ottawa, 1885.

Name and Locality.	Date of Establishment or Incorporation.	Annual Income.	Sources of Income.	Amount of Endowment.	Capital invested in Buildings and Lands.	Number of Professors and Lecturers.
College of Ottawa, Ottawa.	Established in 1848, and granted University powers in 1866.	$23,235.	1. Board and Tuition of Students..... $22,785 2. House Rent 450 $23,235	$15,000.	$194,000	22

Departments of Study.	Length of Course.	Number of Students in each Year of Course.	Number of Graduates.	Schools in connection with Institution.
1. Commercial	4 Years.	Commercial 300	In Arts 37	.....
2. Collegiate and Classical Course	7 "	Classical 170	In Literature 12	
3. Scientific Course	3 "			
4. Civil Engineering	4 "	Theological 30		
5 School of Theology	....			

Laboratories.				Apparatus.		Number of Volumes in Library.	Museum and its Nature.
Chemical.	Physical.	Mechanical.	Other.	Kind.	Value.		
One.	One.	....	....	Philosophical.	$3,000.	8,000.	1. Zoological. 2. Geological.

5. The Western University, London.

This Institution, in connection with the Church of England in Canada, was incorporated in 1878, with power to Huron College to affiliate with it. The affiliation between the College and the University took place in 1881, and the University was inaugurated in the month of October of that year. The object of its establishment was, as a Church of England Institution in the Diocese of Huron, to obtain the same power of conferring Degrees in Divinity, Arts, Medicine, and Law as was possessed by the sister University of Trinity College; also, that a liberal education in Arts, Science, and Literature might be extended to that extensive portion of the Province of which London is the geographical centre. Huron College was first opened in 1863.

FACULTIES.—Besides that of Divinity—Huron College being the Divinity School—a Medical Faculty has been connected with the University ever since its inauguration, the Lectures being delivered in the University Buildings. A Law School was established at London, in September, 1885, but is not affiliated.

II. THEOLOGICAL COLLEGES.

1. Knox College, Toronto.

In 1844, shortly after the disruption took place in the Established Church of Scotland and had spread to Canada, arrangements were made for the training of young men for the ministry of the Presbyterian Church of Canada. In 1846 the Institution which had been established for that purpose, was put on a more permanent basis, and the course of study extended over six years; three being devoted to general studies and three to Theology. In 1885, it was incorporated as "Knox College." In 1875, the year of the Union between the "Presbyterian Church of Canada" and the "Canada Presbyterian Church," it was agreed that the United Church should not be required to elect Trustees for an Arts Department in either Queen's Univerity or Knox College. In consequence of this arrangement, the Board of Management of Knox College is appointed annually by the General Assembly, while the Board of Trustees of Queen's College is a self-perpetuating body.

GOVERNMENT.—The Senate is composed of the Professors and Lecturers, and thirteen other members (ten clerical and three lay) appointed by the General Assembly. The Board of Management have charge of the finances.

CANDIDATES, before entering upon the Theological Course, must present a Presbyterial Certificate, together with evidence of having obtained the degree of B.A. at the University of Toronto, or at McGill College, Montreal, or at Queen's University, or at some other University recognized by the Senate. *Failing this, they must present* a certificate of having pursued a literary course, *and passed satisfactorily* the necessary examination therewith; they must also *undergo an elementary* examination in Hebrew.

COURSE.—The Theological Course extends over three Sessions of six months each, the different departments being Exegetics, Biblical Criticism, Apologetics, Church History, Systematic Theology, Homiletics. A general certificate is given to successful students, that they may be taken by Presbyteries on preliminary trial for license.

DIPLOMA.—A Diploma from the College is given to students. The Senate is also empowered to grant degrees in Divinity.

SCHOLARSHIPS.—A number of Scholarships are offered for competition among such University undergraduates as intend prosecuting their ministerial studies in the College.

2. Huron College.

(See Western University.)

3. Wycliffe College.

This College (incorporated under the name of the Protestant Episcopal Divinity School) is the Theological School for the Evangelical portion of the members of the Church of England in Canada. Its "work and methods are based upon two distinctive positions: one, more external—affiliation with the Provincial University; the other, internal—distinctive evangelical teaching."

By the affiliation of the College with the Toronto University, its students may take a complete University Course, or they can receive instruction in Philosophy and Mental Science, History, Languages, and other departments. By a recent statute it is enacted that subjects taught in this and other Theological Colleges, viz., Biblical Greek, Biblical Literature, Church History and Apologetics, are allowed as options in the University of Toronto in the third and fourth years. Regular students of the College are (*a*) Graduates in Arts of some recognized university; or (*b*) matriculated students of the University of Toronto. Those students who are not graduates are required to pass the Matriculation Examination of the University of Toronto. On leaving the College they will receive a certificate of the lectures they have attended and the work they have done. Prizes of books are given in the different departments. Bursaries of the value of $120 each are available, tenable for one year. They are renewable at the discretion of the Council.

MISSION SOCIETY.—In connection with the College there is a "Students' Mission Society," having for its object the opening up of new Missions and keeping open old ones which are unable to maintain a resident clergyman.

4. McMaster Hall, or Baptist College, Toronto.

This College was founded in order to increase the number and efficiency of the Baptist ministry in the Dominion of Canada. In 1883 it became the Theological Seminary of the whole Dominion of Canada, the Theological departments of the Woodstock College, Prairie College, Manitoba, and of Acadia College, Nova Scotia, having, by vote of Conventions, been transferred to Toronto.

The Baptist body is mainly indebted to the liberality of the Hon. Senator W. McMaster for the very fine building in which the *work is* carried on, and for the endowment of all the Chairs of *Instruction.*

AFFILIATION WITH UNIVERSITY OF TORONTO.—In July, 1885, the College affiliated with the University of Toronto. As a result of this affiliation certain



branches taught in the McMaster Hall, viz., New Testament Greek, Church History and Apologetics, may be substituted for certain other studies in the third and fourth years of the University Course.

COURSES OF STUDY.—Three distinct Courses of Instruction have been organized: (i.) A course of three years for University Graduates; (ii.) a course of four years for non-graduates who are prepared to take Hebrew and Greek; and (iii.) a course of four years for English students.

DIPLOMAS.—Diplomas of Graduation in the Course are granted, on examination, to those students who have successfully completed the studies of any one of the courses of the College. Graduates in Arts who have completed the Theological Course may, on examination in prescribed subjects, receive the degree of Bachelor of Divinity. They may also obtain the degree of Doctor of Divinity.

SOCIETIES.—"The Fyfe Missionary Society," designed to foster the missionary spirit, and "The McMaster Hall Theological Society," for the discussion of current theological and philosophical questions.

5. St. Michael's College, Toronto.

This College was established in 1852, by the Basilian Fathers from Annonay, France, at the request and under the patronage of the Most Rev. Dr. Charbonnel, Roman Catholic Bishop of Toronto. It was incorporated in 1855. In 1861 the College was affiliated with the University of Toronto, on a basis similar to that of the affiliation of the Roman Catholic Colleges of England and Ireland with the University of London. The students are considered as matriculated upon passing the University Examination. At the end of the first and the third year, certificates from the College are accepted in lieu of the University Examinations. At the end of the second and the fourth year, the Examinations are passed before the University Examiners. Throughout the course, all the Lectures in Mental and Moral Science, Civil Polity and History are given at St. Michael's College.

THE CLASSICAL COURSE.—Besides certain English branches, this course embraces the Greek and Latin languages, Belles-Lettres, History, Mathematics and Natural Sciences; German optional. This course extends over five years.

HIGHER COURSE.—A further course, covering two years, embraces Mental and Moral Philosophy, Natural Theology, Natural Philosophy and Inorganic Chemistry. Special lectures are delivered on Mental and Moral Science and History, as prescribed by the University of Toronto.

THEOLOGICAL COURSE.—In addition to these courses of study, there is a Theological Course, in which candidates for the ministry are in part prepared for their work, the course being completed at the "Seminary" in Montreal, Province of Quebec.

SOCIETIES.—Besides two religious Societies, or Sodalities, there is a Literary Association—"The St. Michael's Society" and "The St. Charles Literary Society."

6. Assumption College.

This College, situated at Sandwich, was established in 1856 by the Jesuit Fathers. In the year 1870 it was transferred, at the request of the Right Rev. Bishop Walsh, of London, to the Basilian Fathers, who conduct St. Michael's College in Toronto. In consequence of this arrangement, the courses of study in the two Colleges are almost identical.

Statistics of Theological Colleges in Ontario, 1885.

Name and Date of Incorporation.	Annual Income.	Amount of Endowment.	Capital invested in Buildings, etc.	Teaching Staff.	Departments of Study.	Length of Course.	Number of Students.	Number of Graduates.	Laboratories.	Museums.	Apparatus and Value.	Volumes in Library.
1. Knox—1845 ..... Presbyterian.	$15,000	$180,000	$120,000	6	1. Theology ..... 2. Classics	3 Years.	70	391	.....	Geological .... Archæological.	.....	11,000
2. St. Michael's College.. 1855. Roman Catholic.	.....	.....	$175,000	9	1. Theology ..... 2. Philosophy ..... 3. Classical ..... 4. Commercial	3 Years.	120	..	.....	Chemical ..... Physical	.....	1,500
3. Huron—1863 ..... Church of England.	$30,000	$40,000	$30,000	1	1. Theology ..... 2. Classics ..... 3. Mathematics	.....	5	52	.....	.....	.. ..	4,000
4. Wycliffe—1879 ..... Church of England.	$3,000	$63,000	$54,000	6	Theology	4 Years.	25	23	.....	.....	.....	4,000
5. Toronto Baptist College—1880.	.....	.....	$35,000	7	Theology	.....	60	21	.....	.....	.....	7,250



III. CLASSICAL AND LITERARY COLLEGES.

1. Albert College, Belleville.

(See also Alexandra College.)

This Institution, which was founded in 1854 by the General Conference of the Methodist Episcopal Church, for the purpose of the higher education of the youth of that denomination, was incorporated in 1857, under the name of "Belleville Seminary." In 1866, by Act of Parliament, the name was changed to Albert College, and a Senate created with power to confer degrees in Arts. When the different Methodist bodies united in 1884, this College, without University powers, was retained and adopted by the General Conference as a Church School, and affiliated to Victoria University. The College, as now constituted, has an ample teaching staff for imparting to ladies and gentlemen instruction in the advanced branches of a liberal education. The principle of co-education is here acted upon.

CURRICULUM.—The curriculum comprises eight distinct courses: (1) Collegiate Course of three years, embodying elective undergraduate studies; (2) Junior and Senior Matriculation in the different Arts and Faculties of Victoria University; (3) Teachers' Course to prepare students for the literary examination for the different grades of teachers' certificates; (4) an Agricultural Course, covering two years; (5) Musical Course; (6) a Commercial or Business College course; (7) the Fine Arts Course (the course of study is that prescribed by the Ontario School of Art, with which the College is in affiliation, so that the prizes offered by that School are open for competition to students of the College.)

ADJUNCTS.—The College is furnished with a library, a museum and a reading-room. The Societies connected with the College number four: the Alumni Society, the Philomathian Society (for improvement in rhetoric and elocution), the Polymnian Society (composed of the ladies of Alexandra College), and the Y. M. C. A.

PRIZES.—The College Senate offers annually for competition a number of prizes, which has been increased by friends of the College, who present prizes for certain subjects or in certain departments.

2. Woodstock College.

This College, formerly "The Canadian Literary Institute," was founded in 1857 by the Baptists, and has been maintained principally by them. Before the establishment of McMaster Hall, Toronto, this College was the Baptist Theological School, and is now recognized as the College for the literary preparation of candidates for the ministry. There are three separate structures: the main building occupied by men students; another is occupied by the ladies, under the care of a Lady Principal; the third is the commercial building. The principle of co-education of the sexes is here fully illustrated.

CURRICULUM.—The curriculum is comprehensive, embracing not fewer than six different courses besides that pursued in the Commercial College.

SOCIETIES.—In connection with the College there are several Societies. These are: The Philomathic, a literary Society, the exercises of which are debates, essays, etc.; the Judson Missionary Society; the Excelsior Society, and the Gleaner Society, the latter composed exclusively of ladies. Each of the two latter Societies has a library of its own. There is also an Association of the Alumni and Alumnæ. Two reading-rooms, well supplied, complete the College equipment. Prizes are given in the various subjects taught.

3. Trinity College School.

This School, though bearing the same name as the University of Trinity College, is not in any way under its control. It was opened May 1st, 1865, in the village of Weston, near Toronto. During the year 1868 it was removed to the town of Port Hope, on Lake Ontario. The enlargement and efficient equipment of the School has been effected under the direction and management of the present Head Master, the Rev. C. J. S. Bethune, M.A., D.C.L., who has filled the post since 1870.

CORPORATION.—An Act passed in 1871 constituted the School a corporate body, consisting of the Bishop of Toronto, the Chancellor, the Provost and Professors of Arts of Trinity College, the Head Master of the School, and other persons.

COURSE OF STUDY.—Pupils are prepared for the Matriculation Examination of the Universities, and the Entrance Examinations of the Law Society and the different Medical Schools of the Province, the Royal Military College, Kingston, etc. Instruction can be given, if necessary, in Telegraphy and Shorthand Writing.

DISCIPLINE.—The discipline and general management of the School are based upon the English public school system.

EXHIBITIONS, BURSARIES, ETC.—The following Exhibitions are in the gift of the School: Two of $50 each, and one of $25. These are awarded annually. The Corporation also offers Twenty Bursaries of the annual value of $120 each. The Exhibitions and the Bursaries are for the benefit of the sons of the clergy of Ontario. A scholarship of the annual value of $60 has been founded in memory of the late Rev. F. A. Bethune, B.A., once an assistant master in the school. It is awarded to the head boy in the Fifth Form. In addition to the Governor-General's medal for Mathematics, the Chancellor's prize for General Proficiency, and the Provost's for Divinity, a number of prizes are awarded for specific subjects.

Statistics of Classical and Literary Colleges, 1885.

Name and Date of Incorporation.	Annual Income.	Amount of Endowment.	Capital invested in Buildings, etc.	Teaching Staff.	Departments of Study.	Length of Course.	Number of Students.	Number of Graduates.	Laboratories.	Museums.	Apparatus and Value.	Volumes in Library.
...t College ..... 1857—Belleville.	$9,000	$55,000	$35,000	11	1. Collegiate ..... 2. Music ..... 3. Fine Arts ..... 4. Commercial ..... 5. Agriculture	3 Years. 3 " Varies. " 2 Years.	175	172	Chemical	Mineralogical. Natural History Casts of Antediluvian Animals.	Chemical, $400.	2,200
...stock College ..... 1857—Woodstock.	$10,000	$41,000	$75,000	10	1. Collegiate ..... 2. Commercial ..... 3. Music ..... 4. Fine Arts ..... 5. Ladies' Regular Course 6. " Special " 7. " Mixed "	4 " Indefinite. 3 Years. 3 " 3 " 1 "	195	....	.....	Nucleus of one.	1. Physical and Chemical, $500. 2. Astronomical Observatory, with Instruments, $4,000.	3,500
...ty College School .... 1872—Port Hope.	$40,000	.....	$90,000	10	1. Classical..... 2. Commercial	6 Years.	135	901	.....	Collection of Canadian Fishes, Fossils, Indian Antiquities.	Maps, Globes, etc., $250.	950



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2. Alma

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DIPLOMAS.—The course of st
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NO PRIZES.—One special fea
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SOCIETIES.—The students ha
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izations.

3. Bishop Strachan Sc

This College [illegible]

STAFF.—The Lady Principal is assisted by an efficient staff of instruction, seventeen in number, seven of whom are resident. Every arrangement is made for competent teaching in every department, and for the due supervision and moral culture of the pupils, as well as for their health and comfort. The staff includes ladies who have distinguished themselves at the University and the Provincial Teachers' Examinations, and who have had the advantage of experience and professional training. The full course of study is intended to occupy at least six, and in most cases seven years, the Fifth or Lower Senior Class work requiring two years.

EXAMINERS.—The examiners are selected from University graduates, and there is a University Department, in which candidates are prepared for the examinations in the Trinity College Course of Study for Women, or for Matriculation at the University of Toronto. Several pupils have already matriculated at both universities. Opportunities are thus given for higher culture in the Languages, in English Literature and Composition, Elocution, Science, the Mathematics, and in Art.

NOTE.—Such of the pupils as have completed their course of study at Wykeham Hall, but may desire to remain there to perfect themselves in any special branches, or to qualify themselves as Teachers, can do so on the same terms as members of the Senior Classes, subject in every respect to the discipline of the school.

MEDALS, PRIZES, &c.—Medals are given for General Proficiency in the Lower and Upper Senior Class ; a Silver Cross in the Upper Intermediate, and valuable prizes in books in all the subjects of study, while those who merit it receive Honorable Mention.

4. Young Ladies' College, Brantford.

This College, established in 1874, is in connection with the Presbyterian Church in Canada. It is situated in the City of Brantford, on the Grand River, in a fertile and beautiful part of the country. The College is under the management of a Board comprising Visitor and Honorary Director (the Moderator of the General Assembly of the Presbyterian Church in Canada); two Official Visitors (appointed by General Assembly); an Advisory Council of three Clergymen, and a Board of nine Directors.

DEPARTMENTS.—I. The Preparatory Department, and II. The Collegiate Department. The time spent in the former depends upon the maturity and application of the student; the latter extends over three years. In the middle and senior years the subjects are arranged to meet the requirements of those who desire to prepare for the Departmental Examinations for Teachers' Certificates. In the Departments of Modern Languages, Literature and History, there is conformity to the University subjects, in order to prepare for the Local Examinations for women held annually in the College, in accordance with the University regulations.

SUBJECTS OF STUDY.—English ; Mathematics ; History and Geography ; French ; Latin ; German ; Science ; Philosophy and Logic.

SPECIAL COURSES.—The subjects are selected from the Departments of Modern Languages and History of the first and second years of Toronto University. Students are permitted to take select studies or special studies in Literature, Arts or Music.

DIPLOMAS AND CERTIFICATES.—Diplomas are awarded to those students who pass satisfactory examinations, on the completion of the entire course. Every candidate who has passed the University Examination in one or more groups, and has passed in the Honor subjects of the group, is entitled to a CERTIFICATE OF HER STANDING.

School of Art.—A full course of instruction in the various Departments covers three years, and entitles those who show proficiency in the Art to a Certificate in Art.

School of Music.—Two courses: Instrumental and Vocal. The instruction given embraces all the branches essential to a musical education.

PRIZES.—In addition to the Diplomas and Certificates, Medals and Prizes in Books are given in all the Departments.

5. Hellmuth Ladies' College, London.

This College was founded in the year 1869, by the Right Rev. Isaac Hellmuth, D.D., D.C.L., Bishop of Huron, with the object of providing a thorough, liberal and useful education for young ladies. The buildings are well situated in an airy location; in large grounds, comprising 150 acres; and in the midst of picturesque scenery, on the banks of the River Thames, within a mile of the City of London. The Discipline of the College, its Domestic, Social and Educational Departments, are under the supervision of the Rev. the Principal and his wife. A thorough course in French, German, Italian, Latin and Greek, and in the English Branches, is afforded. A course of lessons in Practical Cookery is given in each year.

Religious Training.—The study of the Holy Scriptures and definite religious teaching occupy an important place in the education imparted. Divine Service is held in St. Anne Chapel, situated in the College Grounds. The afternoon service on the second Sunday in every month is in French.

Reading Room.—Habits of reading are fostered by a well appointed Reading Room, supplied with the best periodicals in literature and art, including French and German publications.

The College proper comprises the following: The School of Literature; the School of Music; the School of Art; the Eclectic School. The course of study in each of these schools extends over three years.

1. The *School of Literature* includes Mathematics, History, Classics, French, Italian and Spanish, Natural Science, Physiology, Domestic Economy, English Subjects, German.

2. The *School of Music* includes a course in Theory, Harmony, the History of Music, and Choral Singing, and in *one* of the following:—Piano, Singing, Organ, and Violin; and to gain a moderate degree of knowledge in *one* of the remaining three. By arrangement, Trinity University, Toronto, will hold Examinations in this College for those pupils who desire to proceed to the Degree of Bachelor of Music. A scholarship at the Conservatory of Music, Leipzig, has been lately founded for graduates from this School.

3. The *School of Art* includes the Course of Study pursued in the Ontario School of Art and the Local Art Schools.

4. *Eclectic School.*—The Course of Study in this School has to be approved of by the Principal.

DIPLOMAS, MEDALS, ETC.—Diplomas are awarded in each School, and certificates are given for a partial course. Several Gold and Silver Medals are available for competition.

FELLOWSHIPS.—Two Fellowships of the value of $100 each per year, for two consecutive years, are awarded in each School to the students who have been placed respectively first and second at graduation; such students to continue in the College the study of the subjects in which they have gained the distinction.

SCHOLARSHIPS.—Scholarships, for General Proficiency in the different Schools, are annually offered for competition in June.

6. Wesleyan Ladies' College, Hamilton.

This Institution, situated in Hamilton, was incorporated by Act of Parliament and was opened in 1861, under the auspices of the Conference of the Methodist Church in Canada. It was the first College in the Province chartered for the separate education of young ladies, although not the first which provided facilities for the higher education of women. The Upper Canada Academy—another Methodist institution—(now Victoria University), which was opened in 1836, had from the very first a ladies' department in it, presided over by a Preceptress and other teachers. It was then the only institution of the kind in Upper Canada that formally adopted the principle of co-education.

Under the Act of incorporation of this College, the President and nine members of the Board of Directors are elected by the Stockholders, and the remaining five by the General Conference, and may belong to other Protestant communions, while the pupils are at full liberty to attend their own churches.

COURSE OF STUDY.—The Course of Study is very complete, preparing the pupils to appreciate the standard works of the day in Science, Literature, Languages and Philosophy.

DEPARTMENTS OF STUDY.—The PREPARATORY and the ACADEMIC Department lead up to the COLLEGIATE Department, which extends over four years, and is quite comprehensive, qualifying pupils to pass the Graduation Examination in any form of the High School Course. Full courses in the Modern Languages, under native teachers, are provided.

Additional Departments.—Besides the ordinary scholastic course, there are connected with the College a School of Music and an Art Department, in which the studies are the same as are pursued in the Provincial School of Art and Design, with which this Department is affiliated; consequently the examinations and the chances of Provincial prizes are the same.

SCHOLASTIC ADJUNCTS.—A Library of well-selected books, a Reading Room, a general Museum—the accumulation of over twenty years—and a fine set of maps, globes, etc., increase the efficiency of the College.

SOCIETIES.—In connection with the College there are two Literary Societies, a Senior and a Junior, the object and exercises of which are alike. A monthly paper, *The Portfolio*, in the strictest sense a students' paper, edited by students in attendance, and under the direct supervision of the Faculty, is issued by these Societies.

PRIZES.—Besides the Governor-General's Silver Medal for proficiency in English Literature, prizes are offered in the different Departments by friends of the College and by the Association of Alumnæ.

HONORS.—The College has power to confer scholastic distinctions. The title of M.L.A. (Mistress of Liberal Arts) is given to those who complete the Classical Course; that of M.E.L. (Mistress of English Literature), to those who complete the English Course; in each case a Diploma accompanies the title. Certificates are granted to those who take a partial Course, and Diplomas to those who complete the Course in Music.

7. Ontario Ladies' College, Whitby.

This College is situated in the town of Whitby, and occupies extensive buildings very appropriate to college purposes. It is conducted under the auspices of the Methodist Church of Canada. The grounds embrace an area of about ten acres and are abundantly provided with means of out-door exercise.

The COURSE OF STUDY comprises three Departments—Preparatory, Academic and Collegiate—in each of which the subjects of study include all that are usually taught in schools of a high grade.

COLLEGIATE COURSE.—The work required for University Matriculation is made the basis of the Collegiate Course, so that pupils may prepare for this examination, or for any of the examinations for teachers' certificates, whilst attending the regular classes and going on to graduation. Special attention is given to Reading and Elocution.

SCHOOL OF MUSIC.—This School, presided over by a Professor of Music, presents a graduation course in Instrumental and Vocal Music, such as is given in American and European Conservatories. The course of study is adapted for those wishing to fit themselves to become teachers or organists.

SCHOOL OF FINE ART.—The instruction given in this Department carries the pupils over a graduation course in the principles of Fine Art, such as is given in the Ontario School of Art, with the same examinations and certificates.

APPARATUS, ETC.—The Museum and apparatus for the teaching of the higher branches of Natural Science are well adapted for the teaching of this subject in ladies' colleges.

MEDALS, ETC.—A number of medals, gold and silver, as well as scholarships, are open for competition to pupils in the various Departments.

DEGREES AND DIPLOMAS.—The Degree of M.L.A. is conferred on those who satisfactorily complete the prescribed course of study. That of M.E.L. is conferred on those who complete the same course, without Latin, French and German. A Diploma is granted to those who complete the prescribed course in Music. Diplomas, grades A and B, are awarded to those completing the Fine Arts Courses.

SOCIETIES.—Two Societies are formed among the pupils—a Missionary Society, which takes great interest in the Home and Foreign Missionary Society of the Methodist Church; and a Literary and Musical Society, which publishes monthly throughout the collegiate year a paper called *The Sunbeam*.

VISITORS' REPORT.—The Visitors appointed by the General Conference of the Methodist Church report annually to that body.

8. Ladies' College, Ottawa.

This College, pleasantly situated in Ottawa, the capital of the Dominion, was established under the auspices of the Presbyterian Church of Canada, with a view to afford the young ladies of the eastern portion of the Dominion a first-class education, based upon Protestant principles. To this end the Board of Managers secured affiliation with, and recognition from, the General Assembly of the Presbyterian Church in Canada, who appoint two Visitors, and, by Act of Parliament, eight members of the Board of Trustees (fifteen in all) must belong to the Presbyterian Church.

COURSE OF STUDY.—The Course of Study is comprehensive, embracing a Preparatory Course, and three Collegiate Courses—Junior, Middle, and Senior—designed to afford a thorough training in the branches of an English, Classical and Scientific Education. With a view to impart a good education to the pupils, the English subjects receive special attention, both in the purely literary and historical departments—thus giving prominence to a study of the English language, literary and historical.

FINE ARTS.—In the Fine Arts Department, pupils are instructed in Sketching from Models and Nature; Crayon Drawing; and Painting in Oil and Water Colors. Free Hand Drawing is compulsory on every pupil in the College.

MUSIC.—While Music is one of the departments of instruction, the Conservatory of Music offers advantages to those who desire to devote themselves entirely to the study of music. The Course embraces Piano, Organ, Violin

DIPLOMAS, CERTIFICATES, AND PRIZES.—Diplomas are granted to such students as take up the College Course regularly and proceed from year to year; and Certificates to those who take a special course adapted to their literary standing. Besides these, prizes are awarded in the form of gold and silver medals for *First* General Proficiency; and of books for *Second* General Proficiency, and the highest marks in each study.

9. Demill Ladies' College, Oshawa.

This College, under the management and control of the Rev. A. B. Demill, is well situated near the town of Oshawa. The building is large and commodious, and supplied with various modern improvements. The College is non-denominational, but every effort is made to surround the students with the highest moral and religious associations. One very noticeable feature in connection with the School is that there are no day pupils.

COURSE OF STUDY.—There are two courses in the College: the Preparatory, covering two years, in which the subjects of study are entirely English; the Collegiate, covering three years, in which the instruction is of the highest academic nature. The Music and the Art Departments are under the supervision of competent teachers.

COURSE IN MUSIC.—Pupils desiring to graduate are required to pass an entrance examination. The course spreads over two years and embraces the following studies: Pianoforte, Organ, Harmony and Musical Form. The examinations for graduating pupils are conducted by outside examiners. A successful examination at the end of the full course will entitle the pupil to a Diploma.

ART DEPARTMENT.—The course embraces the elementary principles and rules of Drawing as applied to both pencil and crayon. Special attention is paid to instruction in Oil Painting, Ornamental Painting on China, Glass, Wood, Brass, Satin, and Plush. Sketching from Nature is a prominent feature of the course in this Department.

ELOCUTION.—Semi-weekly lessons in Elocution are given by a thoroughly competent teacher. Careful attention is given to vocal culture and an effort is made so that an easy and natural style of reading and speaking may be acquired.

HONORS.—Satisfactory examinations in the course will entitle the students to the Degree of "Mistress of Liberal Arts." When the examinations are confined to the English branches the students will receive the Degree of "Mistress of English Literature."

LIBRARY, ETC.—The Library and the Reading Room are well equipped, and a Museum is in course of formation.

10. Woodstock College—Ladies' Department.

(*See Woodstock College.*)

11. Loretto Abbey, Toronto.

The Institute of which this Abbey (founded in 1847)—the Mother House in Canada—is a branch, is of ancient origin, and has been for more than two centuries devoted to the instruction of youth. The Mother House was first established in Rome, whence it was transferred to Munich. From this latter city, about 1683, *Houses were established* in Hammersmith and York, England. In *the early part of this* century (1822) the community established a

House at Rathfarnham, near Dublin. To this first Irish foundation the Mother Superior gave the name of "Loretto," from the House of Nazareth now at Loretto, in Italy. Hence all filiations from the Irish Mother House have carried the name with them.

STATISTICS.—The cost of the buildings was $70,000. The income varies from $11,000 to $13,000. Cost of board and tuition, $200 a year. The number of pupils is 200; about the same number have graduated since 1847.

STUDIES.—The Course of Instruction in this establishment extends from four to six years. It comprises every branch suitable to the education of young ladies. They receive tuition, according to the wishes of parents or guardians, in English, French, Italian, German and Latin Languages; Harp, Piano, Melodeon and Guitar; Singing; Oil Painting, Grecian Oil Painting, Painting in Water-colors; Pencil, Pastile, and Monochromatic Drawing; Embroidery, Plain and Fancy Needlework, etc. Lessons are given in Domestic Economy. The same Course of Instruction is, in the main, pursued in all the Convents and Academies of Loretto.

12. Academy of the Sacred Heart, London.

The order of the Sacred Heart was founded by Madame Barat, in France, in the year 1800, for the puspose of securing a Christian education to women of the higher classes. Houses of this Order exist in Australia, New Zealand, Mexico, and Algiers. Its teachers must hold themselves in readiness to go to any post assigned them by the Superior-General, who resides in Paris. Facilities are thus afforded pupils for acquiring foreign languages. History, literature, the languages, and music receive special attention in the plan of studies. Opportunities are also given for art studies.

The ladies of the Sacred Heart were invited to London by Mgr. Pinsonneault in 1857. The first location chosen was Mount Hope. Afterwards, the Lawrason estate was purchased in 1865. It is surrounded by beautifully laid out grounds. The ladies put up a large brick addition, at a cost of over $30,000, which is admirably heated, lighted, and ventilated. The number of pupils of all kinds in attendance is about 250.

13. St. Joseph's Academy, Toronto.

This Academy was established in the year 1856, by the Sisters of St. Joseph, a religious community founded in Lyons, France, in 1650. With few exceptions, the Separate Schools of the Diocese of Toronto are under their charge. The building is very large and is well equipped. It is situated near the Queen's Park. The Academy is under the supervision of the Mother Superior, and the teaching is done by the Sisters of the Community, aided by Professors in one or two Departments. There are about 150 pupils in attendance.

COURSE OF STUDY.—There are two Departments, a Junior and a Senior; the former embracing all the subjects of an elementary course, including a Kindergarten. The studies in the Senior Department extend over three years, and embrace English, Mathematics and Languages. In this Department the pupils are prepared for University honors, and for First, Second and Third-class Teachers' Certificates.

SPECIAL COURSE.—In this course the pupils are thoroughly grounded in *English*, and devote additional time to the Modern Languages, Music, Painting and Fancy Work.

PRIZES.—At the end of the scholastic year prizes are distributed in the form of medals, gold and silver. Graduating honors, certificates of merit, etc., are

14. Loretto Convent, Lindsay.

This Institution is situated on a slight elevation, which commands a view of the town, the river, and the surrounding country. It was established in 1876. The edifice is noted for the perfection of its style and finish, and for the method of ventilation adopted in the Convent. The study halls, dormitories, etc., are furnished with all modern improvements, chiefly under the direction of the late lamented Father Stafford, of Lindsay.

The great object of the pupils attending this Convent is to pass the Departmental Examinations. It is not so in the other houses of the Institute, consequently a somewhat different course of studies is pursued. In the highest class, composed of about 25 pupils, the High School curriculum is followed. Out of this class 43 passed the Departmental Examinations in three years.

STATISTICS.—The cost of the building was $30,000. The income is about $4,000 a year. The number of teachers is six, and the number of students and pupils about 120; the number of graduates, 55.

STUDIES — The Course of Study for the ordinary pupils is similar to that of the Loretto Abbey, Toronto.

15. Loretto Academy, Belleville.

This Seminary was established at a cost of $20,000. Its annual income is about $4,000. The course extends to eight years, and is similar to that of the Loretto Convents. The number of students and pupils is 155.

16. Loretto Academy, Niagara Falls.

This Institution is situated on a healthy location, overlooking the Falls of Niagara, on the Canadian side, and affords an extensive view of the Falls, Rapids and Islands in the vicinity. It was erected at a cost of $100,000, and opened in 1861. The number of pupils is 63. The studies are the same as in the mother institution, Toronto. Particular attention is given to Music, and the pupils are required to perform at concerts once a month in presence of the teachers. Two medals are given annually—one for satisfactory conduct and assiduity at study, the other for Domestic Economy (including order, neatness of person, and exactitude in keeping in repair articles of clothing, etc.)

17. Loretto Convent, Hamilton.

This Academy for Young Ladies, directed by the Ladies of Loretto, was established in 1865. It is situated on elevated ground (Mount St. Mary) in the western part of the city, and commands a view of Lake Ontario, Burlington Bay, and the broken range of mountains which extends through this part of Canada. The grounds are extensive and ornamented with shrubs and trees. The Course of Study is similar to that of the other Loretto Convents. The number of students is over 100, and the number of graduates 60.

18. Loretto Convent, Guelph.

This Institution was established in 1856. It has five departments of study, and the length of the course extends to seven years. The number of pupils is 390, and the number of graduates 12.

19. Loretto Convent, Stratford.

This *Convent was established* in 1879. Its annual income is $3,000. The *average number of pupils is* 75.

NOTE.—Besides these Colleges and Schools for young ladies, there *many very superior* private schools for the education of young ladies in Tor

V. MEDICAL COLLEGES AND SCHOOLS.

1. College of Physicians and Surgeons of Ontario, Toronto.

The Medical Profession in Ontario was first incorporated by an Act of Parliament in the year 1866, and the name given to it in its corporate capacity was The College of Physicians and Surgeons in Ontario. As every legally qualified Medical Practitioner in the Province is a member of this College, it is not, as its name might indicate, an institution for the teaching of Medicine.

THE COUNCIL.—The business of this corporate body is managed by a Council composed of (1) a Representative from each of the Universities in the Province, (2) Twelve Territorial Representatives who are elected by the Registered Practitioners of Medicine residing within the territorial division, and (3) Five Representatives from the Homœopathic Practitioners. The Council regulates all matters connected with medical education; determines the Curriculum of Studies to be pursued by Students; appoints a Board of Examiners. Candidates passing a satisfactory examination before the Board are enrolled as Members of the College—the prerequisite for being legally qualified to practice their profession in Ontario. In the case of practitioners duly qualified in other countries, the Council fix the terms on which they may be admitted and become legally qualified practioners. In all cases, however, they must undergo the examination.

2. Toronto School of Medicine.

This Medical School, recognized by the several Colleges of Physicians and Surgeons in Great Britain, was established as the Rolph School in 1843, and incorporated by Act of Parliament in 1851. It is in affiliation with the University of Toronto and Victoria University, of which it may be consider the Medical Faculty. The Staff of Lecturers is composed of seventeen physicians. The School is in close proximity to the General Hospital. The students have also access to the various public charities of the city.

COURSE OF STUDY.—As fixed by the College of Physicians and Surgeons of Ontario, the Course of Study extends over four Winter Sessions of six months each.

SUMMER SESSION.—A Summer Session is held in the General Hospital. The teaching is entirely practical and demonstrative, and is intended to supplement the Winter Session.

3. Trinity Medical School, Toronto.

This School was originated in 1850 by Drs. Hodder, Bovell, Badgley and Bethune, and then became a Faculty of the University of Trinity Coilege. In 1855-6 it ceased to be a Faculty of the University. In 1871 it was reorganized under a Faculty differently constituted but with many of the original Professors. In the year 1877 the School, instead of being one of the Faculties of the University of Trinity College, became an affiliated body.

COURSE OF STUDY.—The Curriculum embraces all the subjects required by the College of Physicians and Surgeons of Ontario; and besides these, Lectures on Medical Psychology, Biology, Zoology, etc., are provided for those students who desire to graduate at the University of Toronto, or wherever else these courses are demanded.

AFFILIATION, ETC.—This School is in affiliation with the Universities of Trinity College, Toronto, and Manitoba, and is recognized by the Royal College of Surgeons, England; the Royal College of Physicians of London; the Royal College of Physicians and Surgeons, Edinburgh; the Faculty of Physicians and Surgeons of Glasgow; the King's and Queen's College of Physicians of Ireland, and by the conjoint Examining Boards in London and Edinburgh.

SUMMER SESSION.—A Summer Session of eight weeks, consisting of Didactic and Clinical Instruction, Lectures, and Demonstrations, is given at the Toronto General Hospital by the Professors of this School, conjointly with the Professors of the Toronto School of Medicine.

4. Royal College of Physicians and Surgeons, Kingston.

This Medical College was incorporated in 1854, and, possessing independent powers and privileges, is entitled to confer upon its own students and others the Diplomas of "Licentiate" and "Fellow." In consequence of its affiliation with Queen's University, its students obtain the Degree of "Doctor of Medicine and Master of Surgery," by passing the requisite examination.

FOREIGN RECOGNITION.—Certificates of attendance at this College are recognized by the Royal College of Surgeons, London and Edinburgh.

CURRICULUM.—The Course of Study embraces all the subjects required by the Royal College of Physicians and Surgeons of Ontario, and may be pursued either at the College, or partly there and partly at some other recognized Medical School, provided that at least one full session has been spent at the College. *Full* courses in the subjects of instruction for at least three (3) sessions must be attended before a student can present himself as a candidate for either the Diploma of the College or the Degree of the University. In either case the candidate must have completed a period of four (4) years' study, and have passed the Matriculation Examination of Queen's University or its equivalent.

5. Ontario College of Pharmacy, Toronto.

The Ontario College of Pharmacy is established in Toronto, having been incorporated by Act of Parliament in 1871. It is designed for the education of those who desire to carry on the business of Chemist or Druggist.

THE COUNCIL.—The College is under the control of the Pharmaceutical Council. It has authority to grant certificates of competency, and the holders of these certificates must be registered. The qualification for such certificates is that the candidate shall furnish to the Council satisfactory evidence of having served an apprenticeship, under a written contract, for not less than three years, to a regularly qualified Pharmaceutical Chemist. He must also satisfy the Council that he has passed an examination entitling him to admission to a High School, Collegiate Institute, or to a fourth class of a Public School.

COURSE OF STUDY.—The course of instruction pursued in the College covers all the subjects prescribed by the Council for certificates, and embraces Chemistry, Elementary and Pharmaceutical; Pharmacy; Materia Medica; Botany; Practical Dispensing; Reading and Translating Prescriptions.

6. School of Dentistry of the Royal College of Dental Surgeons for Ontario.

The Royal College of Dental Surgeons, incorporated in 1868, *was empowered to* establish a School of Dentistry in the City of

REQUIREMENTS.—The authorities of the School require, as a preliminary, that the candidates shall have passed the High School, or an equivalent examination. He must also enter into indentures with a Licentiate for two years and a half, during which time he must attend two full courses, of four months each, in the School of Dentistry.

EXAMINATIONS.—At the end of the first course of lectures he must pass an examination in Operative Dentistry; Mechanical Dentistry; Anatomy; Surgery; Physiology; Chemistry and Materia Medica. An infirmary furnishes subjects for practical work. This Examination constitutes the Primary. The Final Examination, leading to the Diploma of Licentiate of Dental Surgery (L.D.S.), embraces the same subjects treated more minutely. A further Diploma of Master of Dental Surgery (M.D.S.) is conferred, after thorough examination in the same subjects, but of a more advanced character, and the writing of a Thesis on some prescribed subject, on Licentiates of not less than five years' standing.

7. Women's Medical Colleges, Kingston and Toronto.

Although Colleges for the instruction and graduation of women in Medicine have long been in operation in Great Britain and the United States, the first step in that direction was not made in this Province until the year 1880, when the principle of co-education was attempted at the Royal College of Physicians and Surgeons, Kingston. As this did not prove satisfactory, a School for Medical Education of women only was established in 1883. The City Council of Kingston placed at the disposal of the School apartments in the City Buildings, and by means of generous donations the School was placed upon a permanent basis. A similar School was established in Toronto the same year, and it is the aim of each to give all the students a thorough grounding in the scientific and practical rudiments of Medicine.

The Course of Lectures in each College is equivalent in all respects to the ordinary Winter Course delivered in other Medical Colleges and Schools. The requisites for graduation differ in no sense from what is required from the male students. Several have already graduated from the Kingston College; two of whom have gone as missionaries to India; the others have built up good practices, and one of them is a Professor in her Alma Mater. The College in Toronto has not been established long enough to send out any graduates.

Ontario Veterinary College, Toronto.

The Council of the Agricultural and Arts Association was by Act of Parliament empowered to establish a Veterinary College for the instruction of pupils by competent and approved teachers in the science and practice of the Veterinary art, and examine pupils in Anatomy, Physiology, Materia Medica, Therapeutics, Chemistry, and as to the breeding of domesticated animals; and upon proof to the satisfaction of the Council that such pupils possess the requisite qualifications, to grant Diplomas certifying that they are competent to practice as Veterinary Surgeons.

In 1862-1863 a course of lectures on Veterinary Medicine was given in connection with Professor Buckland's Agricultural Class. The course was attended principally by agricultural students. In 1866 three of them graduated. In 1869 part of the premises now occupied by the College was built.

Name.	Date of Incorporation.	Subjects of Study.	Length of Course.	Number of Staff.	Number of Students.	Number of Graduates.	Institutions with which affiliated.
NTO SCHOOL OF MEDICINE ..... Toronto.	1843	Those prescribed by the College of Physicians and Surgeons, Ontario.	4 Years.	17	225	800	1. University of Toronto. 2. Victoria University.
ITY MEDICAL SCHOOL ..... Toronto.	1850	Do do do	Do	14	287	544 including 214 Fellows.	1. University of Trinity College. 2. University of Toronto. 3. University of Manitoba.
L COLLEGE OF PHYSICIANS AND SURGEONS, Kingston.	1854	Do do do	Do	10	155	430	Queen's University.
AL DEPARTMENT OF WESTERN UNIVERSITY, London.	1882	Do do do	Do	15	37	3	1. Western University. 2. University of Toronto.
EN'S MEDICAL COLLEGE ..... Kingston.	1883	Do do do	Do	11	12	7	Queen's University.
EN'S MEDICAL COLLEGE ..... Toronto.	1883	Do do do	Do	13	14	....	University of Trinity College.
OL OF DENTISTRY, ROYAL COLLEGE OF DENTAL SURGEONS, Toronto.	1875	Anatomy, Physiology, Dental Pathology and Histology, Clinical and Operative Dentistry.	2 Sessions of 4 months each.	4	39	172	
EGE OF PHARMACY ..... Toronto.	1871	Chemistry, Pharmacy, Materia Medica, Botany, Prescriptions and Practical Dispensing.	2 Courses of 3 months each.	3	60	690*	
ARIO VETERINARY COLLEGE ..... Toronto.	1863	Anatomy, Physiology, Pathology, Chemistry and Materia Medica.	.....	7	270	546	

* To these may be added 619 who registered at the time of Incorporation.

VI. BUSINESS COLLEGES.

OBJECT.—These Colleges are a practically useful feature in our educational system. They give a business training that can be best obtained in this special class of educational institutions. Their object is to fit young men and women for the various departments of mercantile life. The leading Business Colleges in this Province are located in Toronto (2), Hamilton (2), Belleville, Brockville, Kingston, Guelph, Chatham, Peterborough, London, Ottawa and Owen Sound.

COURSES OF STUDY.—These Colleges are all conducted upon a similar basis, and pursue somewhat analogous courses, though these are possibly more varied in some Colleges than in others. The following details of subjects taught will give an idea of the work carried on: Spelling, Dictation, Business Arithmetic, Mental Arithmetic, Penmanship, Business Correspondence, Business Paper, Commercial Law, Book-keeping, Business Department, comprising Buying, Selling, Correspondence, Banking, etc.; Telegraphy, Type-writing, Shorthand.

IX. MISCELLANEOUS INSTITUTIONS.

I. The Magnetic and Meteorological Observatory, Toronto.

(Under the direction of the Dominion Government.)

In the year 1838 the British Association for the Advancement of Science, in a memorial addressed to Her Majesty's Government, solicited their attention to the expediency of extending, by means of fixed Observatories, the researches regarding the geographical distribution of magnetic forces, to certain stations of prominent magnetic interest within the limits of the British colonial dominion. Canada was named as one of the stations, and a further suggestion was made that the observations should include meteorological as well as magnetical phenomena, and that the stations might be placed under the superintendence of the Master-General and Board of Ordnance.

These suggestions, which were approved of also by the Royal Society, were acted upon, and Lieutenant Riddell, of the Royal Artillery, was sent out as the officer to take charge of the Canadian station. He examined several localities, and at last selected Toronto. A grant of two and a half acres of land was offered by the Council of the University of King's College, with the sole condition that the buildings to be erected should not be appropriated to any other purpose than that of an Observatory, and should revert to the College when the Observatory should be discontinued. The sanction of the Governor-General having been obtained in January, 1840, the building was begun in the spring, and ready for occupation in September. The Observatory is situated in latitude 43°39'25", and longitude 79°21'30" W., at a height



of 107.9 feet above the level of Lake Ontario, and of 342 feet above the level of the sea.

In 1841, on Lieut. Riddell's return to England, the Observatory was placed in charge of Lieut. Younghusband, who remained the Director until near the end of 1843, except for a few months, during which Lieut. Lefroy—now General Sir John Henry Lefroy, R.A., F.R.S., etc.—had charge.

In the year 1850 the Chief Superintendent of Education, the Rev. Dr. Ryerson, at the suggestion of Colonel Lefroy, R.A., submitted to the Government a plan for the establishment of meteorological stations throughout what was then known as Upper Canada, at every senior County Grammar School. In 1853 an Act was passed by the Legislature with the provision recommended. Delay having arisen in supplying the schools with reliable instruments, it was not until 1856 that observations were made at these stations. According to the original design there were thirty chief stations. These were subsequently reduced to ten. At present that number of High Schools report through the Education Department to the Observatory.

The magnetical observations at Toronto, under the auspices of the British Government, were brought to an end in the spring of 1853. Arrangements were shortly afterwards made by the Provincial Government, mainly at the prompting of the Council of the Canadian Institute, to resume the meteorological observations, and the duties were carried on under the guidance of the Professor of Natural Philosophy of University College, J. B. Cherriman, M.A., who continued in charge until the appointment of the late Director, G. T. Kingston, M.A., in the year 1855. The old Observatory was pulled down, and a new one erected on its site, in 1854. In 1880 the present Director, C. Carpmael, M.A., F.R.A.S., took charge, and under him great advances have been made. Foremost among these is the establishing of "Storm Signals," for warning shipping on the lakes and the seaboard of coming storms. The signals consist of a drum, a cone and a lantern, and by the varied position of these the warning is given. Besides these storm signals, which are displayed at the various ports, a code of "Harvest and Snow Signals" has been arranged, and by means of the signals—sun, moon and stars—farmers along the line of railway are warned concerning coming showers, etc. The messages are despatched from the Observatory to the local managers of the railways, and the shower signals are displayed on the moving trains. The daily papers are furnished with forecasts of the "Probabilities"; and below will be found a record of their correctness:—

1885.

STORM SIGNAL SERVICE.

Warnings issued	830	Number verified	741
Percentage verified	89.3		

DIRECTION OF WIND.

Number of predictions	830	Percentage	78.9
Number fully verified	655	Number fully and partly verified	798
Percentage	96.1		

PROBABILITIES.

Number of predictions during year	7129	Number not verified	520
Number *fully verified*	5681	Percentage fully verified	79.7
Number partly verified	928	Percentage fully and partly verified	92.7

2. Royal Military College, Kingston.

(Under the Direction of the Dominion Government.)

The primary object of the establishment of this College, which was opened on June 1st, 1876, was to secure such a complete military and scientific education to young men belonging to the country, as would qualify them to fill all the higher positions in the Canadian military service. At the same time, owing to the breadth and general scope of the Curriculum of Study the graduates are fitted equally for any civil business or profession, public or private.

The Course of Instruction covers four years. Part of this course is obligatory and part voluntary; the former embracing Mathematics, Fortification, Military Drawing, Military History, French or German, Elementary Chemistry, Geology, &c., Drawing (Freehand, Figure and Landscape), Drill (Infantry, Artillery, &c.;) while the voluntary subjects include Higher Mathematics, Higher Fortification, and Higher Chemistry, French or German (other than that taken in obligatory course), Architecture, Hydraulic Engineering.

The average number of graduates each year is about twenty, and of these four are granted commissions in the Imperial Army.

3. The Law Society of Upper Canada.

"The Law Society of Upper Canada was established in 1797 by the Act 37, Geo. III., cap. 13, which enabled the then practitioners of the Law to form themselves into a Society 'for the purpose of securing to the country and the profession a learned and honorable body to assist their fellow-subjects as occasion may require, and to support and maintain the Constitution of the Province.' By the same Act, the Judges of the Superior Courts were constituted visitors, with the authority to sanction such rules as they considered necessary for the good government of the Society. In 1822 the Society was incorporated by the Act 2, Geo. IV, cap. 5, and its functions vested in the Treasurer and Benchers for the time being, elected according to the By-laws of the Society. The Benchers sit in Convocation every Law Term, for the admission of Students and Barristers, and for other general business."—*Hodgins' Canada Educational Directory.*

The permanent seat of the Society is at Osgoode Hall, Toronto. The Society is composed of the Visitors; the Treasurer; the Benchers (*ex-officio* and elected); the Secretary, Sub-Treasurer, and Librarian. In the year 1881 a Law School, with a staff of four Lecturers, barristers-at-law, was established; the attendence at which on part of the students is voluntary. The Examinations consist of a Matriculation Examination; a Primary; an Intermediate, and a Final for Call to the Bar. Scholarships of the respective

values, $100, $60, and $40, together with a Diploma, are awarded to those candidates who, at the Intermediate Examination, have obtained three-fourths of the marks in Pass and Honor subjects. At the Examination for Call to the Bar, three Medals—gold, silver, and bronze—are awarded, together with Diplomas to such candidates as pass with Honors.

4. Public Libraries in Ontario.

In the year 1882 the Provincial Legislature passed "The Free Libraries Act," for the establishment of a Free Library in any city, town, or incorporated village. On petition, the Toronto City Council passed a by-law, establishing a library for the city.

In January 1883, the Free Library By-Law was endorsed by a vote of the citizens of Toronto; the building formerly occupied as the Mechanics' Institute, and afterwards by the "College of Technology," was secured for the purpose. The interior was remodeled so as to furnish a commodious Reading Room, and an additional building erected sufficiently capacious to hold a library of 150,000 volumes. In June the officers were appointed, and the Library was formally opened on March 6th, 1884; the Reading Rooms were opened on the 10th of the same month, and the issuing of books began on April 10th. In February of the same year branch libraries were established in the western and northern parts of the city.

Other Free Libraries in the Province.—There are Free Libraries in the following towns and cities: Berlin (2,066 volumes), Brantford (5,042), Guelph (4,035), Simcoe (2,742), and St. Thomas (2,626).

Powers given to Mechanics' Institutes.—Any Mechanics' Institute in a municipality in which a Free Library has been established according to "The Free Libraries Act," may, by agreement with the Board of Management, transfer to the Corporation of the municipality, for the purposes of the said "Free Libraries Act, 1882," all or any of the property, real or personal, of the Institute.

The Provincial Library.—To these Free Libraries, viewed as a portion of the educational machinery of the Province, may be added the Ontario Legislative Library, Toronto, with its 25,000 volumes, the University, and various college libraries.

X. BENEVOLENT EDUCATIONAL INSTITUTIONS, ETC.

Indian Schools for Boys and Girls, Sault Ste. Marie.

The Shingwauk Home for Boys and the Wawanosh Home for Girls are both situated at Sault Ste. Marie, District of Algoma, *Province of Ontario.* They owe their origin to the indefatigable *efforts of the Principal,* the Rev. Edward F. Wilson. The Shing-

wauk Home was named after an Indian chief (Little Pine), and was first opened at Garden River in 1873. Near the close of that year the Home was destroyed by fire, but was re-erected at Sault Ste. Marie during the following summer—the corner-stone having been laid by the Earl of Dufferin on the 30th July, 1874—and was opened on August 2nd, 1875.

The Wawanosh Home for Girls, also named after an Indian chief (Sailing Gracefully), was opened, with a number of Indian girls as pupils, on August 19th, 1879.

TRAINING.—The girls are thoroughly trained in housework, cooking, baking, and laundry work; and the boys, after spending about two years steadily at school, in their third year commence learning a trade, and during the last two years of residence rank as apprentices. . . . Carpentering and printing are taught within the precincts of the Institution, but for instruction in other branches of trade the boys are sent to the village near by.

These homes are supported mainly by voluntary contributions, the annual grant from the Indian Department being insufficient for their support. Most of the individual children are provided for by weekly contributions made in Canadian Sunday-schools of the Church of England. There are nearly eighty children in the two homes.

NOTE.—A number of Indian schools exist in various parts of the Province. They are under the management of the Dominion Government, but, for purposes of inspection, are under the supervision of the Ontario Education Department.

XI. BENEVOLENT EDUCATIONAL HOMES AND REFORMATORIES.

I. The Boys' Home, Toronto.

This Institution, which now affords accommodation for 150 boys, was opened in 1859, for the training and maintenance of destitute boys not convicted of crime. The Home is open to boys from the age of five to fourteen years. After a boy has been a year in the Home, he may be apprenticed to some responsible person until he attains the age of eighteen years, his wages, meanwhile, being remitted to the Directors to be held in trust. At present the whole number thus apprenticed is sixty-seven. Since the opening of the Home it has afforded a home to 1,500 boys.

INSTRUCTION.—In 1873 the plan of having the boys taught in the Institution instead of attending the city schools was adopted, and proved satisfactory. In 1877 the Board of Trustees of the city schools appointed a teacher, and now the Home is one of the regular city schools, under a female teacher, paid by the Board. The subjects of instruction embrace those taught in the *Third Book of Lessons*. The religious welfare of the boys is fully provided for.

NOTE.—Similar institutions have been established in other cities of the Province.

2. The Girls' Home, Toronto.

This Institution was established as a Public Nursery in the year 1857. In the year 1860 its sphere of usefulness was enlarged by the admission of girls up to the age of fourteen, and by training them for household work. The object of the Girls' Home is "the rescue from vice of young girls, and the bestowal of careful attention to their religious, moral, and temporal welfare; also the maintenance and support of children under the age of seven years." The latter object having subsequently been taken in charge by a separate institution ("The Infants' Home"), the Girls' Home now provides for the maintenance and support of children from two to fourteen years of age.

INSTRUCTION.—In 1877 the City School Board assumed the responsibility of providing for the instruction of the children, and appointed a female teacher for that purpose as one of the regular staff of city teachers.

NOTE.—Similar institutions exist in other cities of Ontario.

3. The Orphans' Home, Toronto.

This Home, designed for the relief and support of all friendless orphans of members of all Protestant denominations, was established in 1851, the result, mainly, of a handsome donation from Jennie Lind, then on a professional visit to Toronto. The management of this institution is similar to that of the Boys' and Girls' Homes. Subscribers to the Endowment Fund to the amount of $200 are entitled to nominate one orphan to the charity.

The female teacher of the school is one of the regularly certificated teachers of the city public schools, the Home having been placed on the list of city schools in 1877, and being ranked as a Third Book Class.

NOTE.—Similar institutions exist in other cities of Ontario.

NOTE.—As the public schools are unable to reach the class of neglected children which is to be found in cities and the larger towns, the institutions just named have been established, and chiefly supported by societies, to meet this want. They care for, educate and train a large number of such children. They are aided out of the Provincial Treasury, according to the number who are cared for in each institution.

4. Industrial School, Toronto.

The idea of establishing such a school in Toronto first suggested itself in 1858, and the plan was then largely discussed. In 1871 the School Act authorized Public School Boards of cities, towns and villages, to establish one or more such schools. An Industrial School for Toronto is now in course of erection near the village of Mimico, seven miles from the city, the Ontario Government having given a plot of eight acres, and leased forty-two in addition.

The Act passed in 1884 defines an "Industrial School" to be: A school *in which industrial* training is provided, and in which children are lodged, *clothed and fed, as well as* taught, shall exclusively be deemed an industrial

5. Industrial Refuge for Girls.

When the "Andrew Mercer Reformatory for Females" was established at Toronto, in 1879, an "Industrial Refuge for Girls" was set apart for the reception of girls under the age of fourteen years, viz., beggars, wanderers, etc.

The Institution is under control of the Provincial Inspector of Prisons and Public Charities. From his Report the following facts are gleaned:—A change has been made in the school work. Instead of the night classes, day classes for the younger have been substituted. As the result of this change "the progress made by some of the younger and later entrants, in two of the elementary branches, was very satisfactory indeed, and indicates the general progress made." Again, "their progress in the school-room is reported (*i.e.*, by the teachers) to be satisfactory. Besides the day classes for the girls, evening classes in reading and writing for the older women who desire to be taught were established. These classes were well attended. The younger women —those under eighteen years of age—had an hour and a half's instruction every morning before beginning their daily work." *(Inspector's Report, 1885.)*

6. Ontario Reformatory for Boys.

About twenty years ago a Reformatory was established at Penetanguishene, on the eastern shore of the Georgian Bay, for boys convicted before any Court of Criminal Jurisdiction, under the charge of a Warden and certain other officers. In 1880 a change in the name and in character of the establishment was made. With a fuller recognition of its "reformatory" than of its "penal" objects, viz., the custody and detention, with a view to their industrial training, and the moral reclamation of the boys confined therein, it was styled a "Reformatory for Boys," and two or more schoolmasters, holding first or second-class certificates, were appointed to it as public school teachers.

The last Report of the Superintendent states that "a good majority of the boys appear to have made fair progress in acquiring the rudiments of an English education. The training of the boys in the different trades—carpentering, tailoring, and shoemaking—and also in the necessary domestic work, has been carefully attended to." At the close of the year there were 220 inmates.

CONCLUSION.

The Sunday Schools existing in the Province are estimated at 3,600, with 200,000 scholars, and 23,000 teachers.

Relying upon the various educational agencies of the Province, Ontario is steadily pursuing a course of progress—material, moral and intellectual. The interest in Education is wide-spread throughout the whole Province, and its people understand how much of their further progress, welfare and happiness depends upon the continued efficiency and improvement of their educational institutions, for which the fullest opportunities are afforded by their system of local self-government, and free political institutions.



Section VII.

MANITOBA.

Manitoba, the "prairie province," the Ohio and Illinois of Canada, is the most regular in its geographical features of all the provinces of the Dominion. It is nearly a perfect parallelogram in shape, being about 200 miles long from east to west, and containing 60,520 square miles, and its general surface is a level prairie, lying only 700 feet above the sea and about 80 feet above Lake Winnipeg. It is situated in the very centre of the North American continent. It is part of the vast domain granted by Charles II in 1670 to the Hudson Bay Co. The policy of that company, who exercised territorial authority over the whole Northwest, such as the East India Company did in India, was to hold for themselves the rich trade in furs and other natural products of the region. Hence, it was represented to the world as a land unfit for habitation except by the Indians and the wild animals which they hunted. So persistently was this policy of concealment maintained and so lasting were its effects, that it is only within the last decade that misapprehensions with regard to the climate and soil of the country have been removed from the minds of the world outside. It was only in 1870 that for a sum of money the company finally surrendered their territorial rights. Manitoba becoming then a province of Canada, the people of the Dominion first began to realize the possibilities of the new land.*

At this period the total population of Manitoba, including a strip of land since awarded to Ontario, was only 11,963, of whom 10,400 were half-breeds and Indians. In 1881 it was 65,954, and the census of 1886 showed it to be 108,640. In 1882 there were only 65 miles of railway, poorly equipped; now there are over 1000 miles of first-class road in operation. In 1882, there was not a single bridge in the province; now it has over 400. In 1882 not a bushel of wheat had been exported; in 1888 the province sent out 12,000,000 bushels of wheat, the total wheat crop being estimated at 14,000,000

* For an account of the beginnings of Manitoba, the reader is referred to several interesting sketches published by Mr. Chas. N. Bell, secretary of the Winnipeg Board of Trade.

bushels; there being a large export also of other grains. In 1871, Winnipeg, the capital of the province, contained 241 souls, now it has a population of about 25,000. In 1882, the first settlements were being made in Brandon, in 1888 that town had a population of over 3,000, and in its market 1,400,000 bushels of wheat, 600,000 bushels of oats, with other kinds of grain brought direct from farmers, were gathered for export. The first attempts at dairying as carried on in the older provinces were made in Manitoba about 1884; in 1888 it had six creameries and 26 cheese factories. Such facts show at once how young the province is, and how rapidly its vast natural resources are being developed.

THE CLIMATE.

Contrary to preconceived ideas, the climate of Manitoba is milder and decidedly healthier than several of the states of the American Union farther south—a circumstance partly due to its being dryer in winter and not so far above the level of the sea. The winter is dry and bracing, not like the raw and chilly cold that prevails in countries several degrees further south, and with an average winter temperature a good few degrees higher. Even in Manitoba a south-western wind at zero *feels* colder than a clear sunny day when the thermometer reads 25 below. It has fewer stormy days in a year than perhaps any other point on the American continent. Windy days are very rare, cyclones and tornadoes are unknown, and the fluctuations from days of intense cold to sudden thaws, so common far east and south, are not experienced here. A fact corroborative of this is that in the winter of 1887, a number of people and thousands of head of stock perished in the storms in the northern American States, but not one life of man or beast was lost in Manitoba through that cause. And yet the thermometer frequently registered 25 to 40 degrees below zero in Manitoba that winter; it ranged not lower if as low in the States referred to; so that a mere reading of the thermometer without a consideration of other conditions would mislead one as to the nature of a Manitoba winter. Comparatively little snow falls on these prairies—the average depth being 18 inches—and horses, cattle and sheep graze out all winter. The snow leaves the ground, and plowing begins before the middle of April, a fortnight earlier than in Quebec. The mean summer heat is 67° to 76°, or about the same as New York state. Referring to the climate of Manitoba, Mr. S. E. Dawson, in his "Handbook of

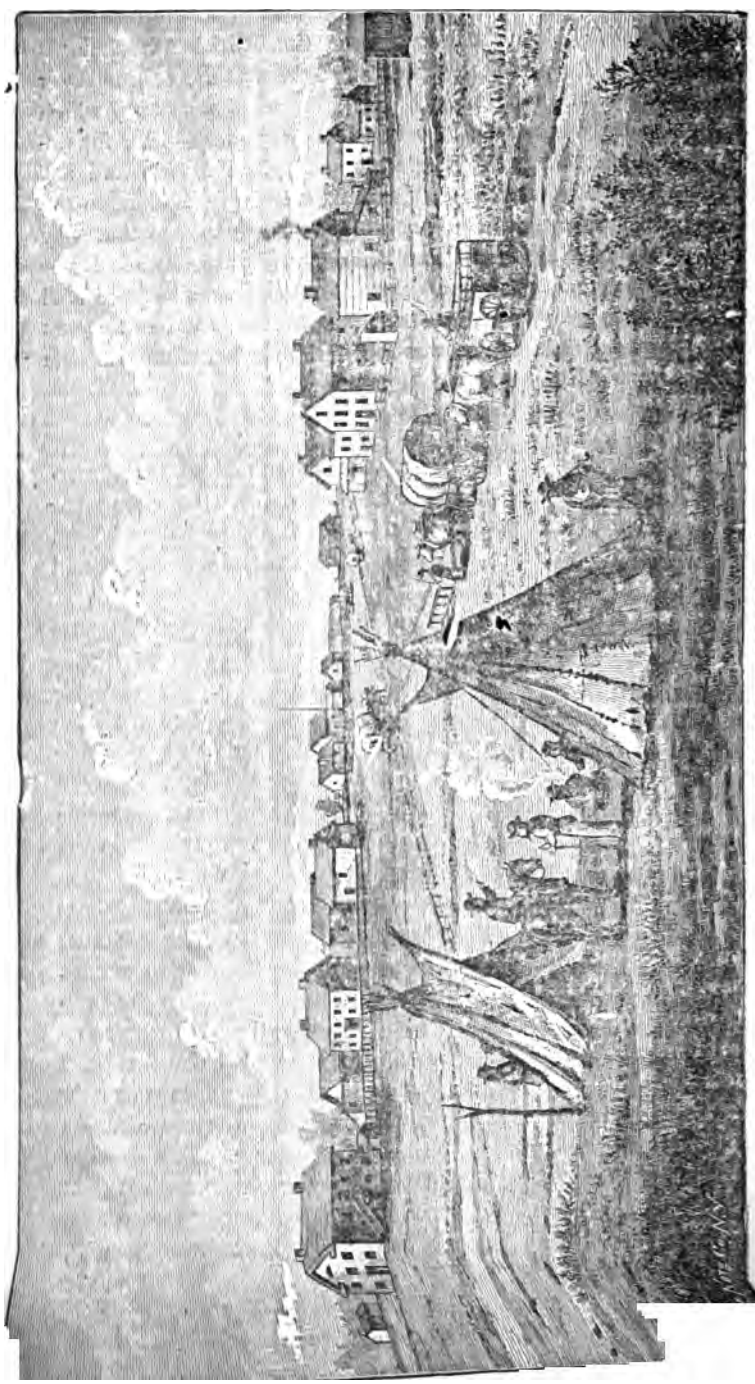
Canada," published on the occasion of the British Association's meeting in Montreal, says: "It seems strange that there should ever have been a question concerning the climate of a country which the Buffalo—an animal without political prejudices—has, for unknown ages, selected as his winter home. Lord Milton and Dr. Cheadle report that their horses, turned out in the fall upon the open prairie, were caught in the spring, so well nourished that they were like balls of fat. At St. Paul, Minn., and on the Peace River the spring opens at the same date. The navigation of the Red River is open as early as that of the St. Lawrence, and in the years 1871 to 1881 the Red River was open ten days before the Erie Canal in New York."

SOIL AND PRODUCTIONS.

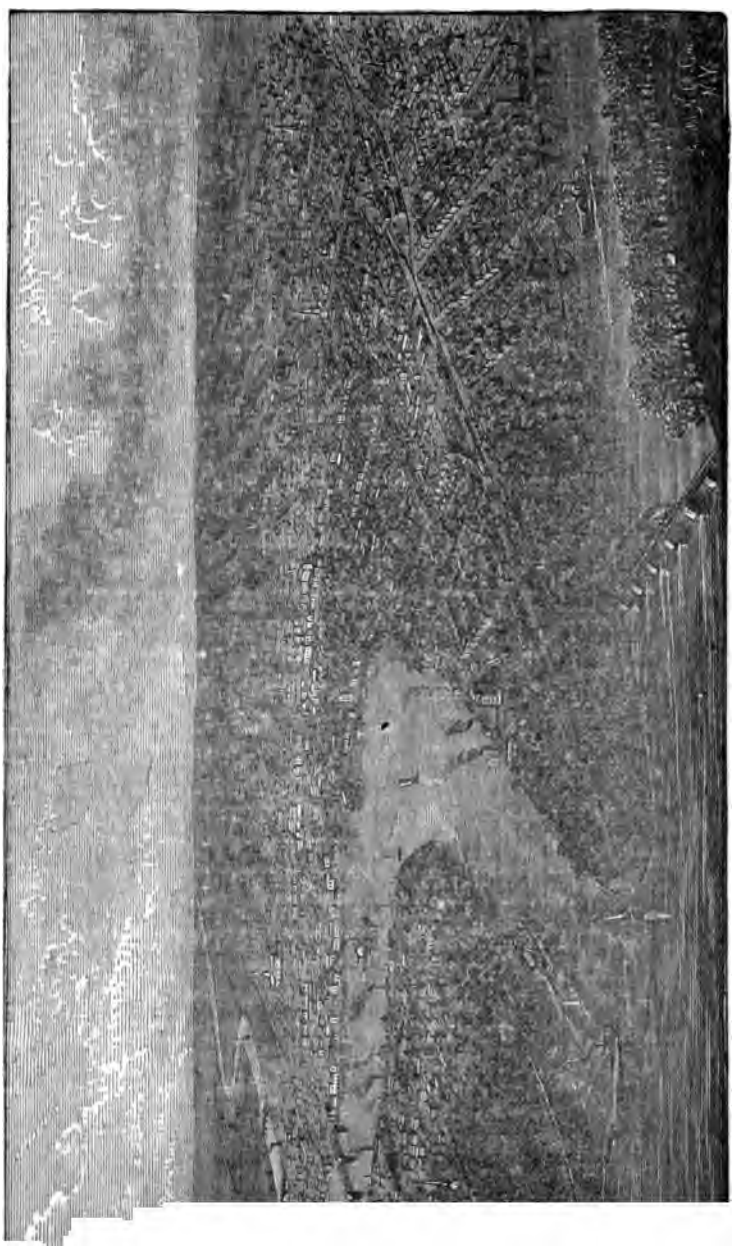
The soil is a rich, deep, black, argillaceous mould or loam, resting on a deep and very tenacious clay subsoil. It is among the richest, if not the richest, soil in the world, and especially adapted to the growth of wheat. Analyses by chemists in Scotland and Germany have established this.

The soil is so rich that it does not require the addition of manure for years after the first breaking of the prairie, and in particular places where the black loam is very deep, it is practically inexhaustible. This great richness of the prairie soil has arisen from the gathering of droppings from birds and animals and ashes of prairie fires, which have accumulated for ages, together with decayed vegetable and animal matter, the whole resting on a very retentive clay subsoil. It is to the profusion of this stored up wealth in the soil, that the agriculturist from older countries is invited.

All the cereals and vegetables grow and ripen in abundance, wheat and other grains not only yield crops that are becoming the wonder of the world, but all of these grains are over the standard in weight, wheat for instance being 62 to 68 lbs. to the bushel. In the summer of 1888 there were several well authenticated cases where farmers raised 60 to 75 bushels of wheat to the acre—yields that have never been equaled in the history of agriculture—and in this year the total wheat yield of the province raised on 432,000 acres gives an average of over 32 bushels to the acre. This average includes of course the production of new settlers who have had little or no experience. It may be mentioned that the annual average in England, with its close cultivation and scientific farming, is 28 bushels per acre.



WINNIPEG IN 1871.



WINNIPEG IN 1888.

Oats grow wonderfully well in Manitoba. It was nothing uncommon last year to meet men who had 70 and 80 bushels of oats to the acre, while some had even as high as 100 bushels. Large quantities of oats are annually shipped from Manitoba to the Western Territories, and very considerable quantities were last year shipped to Ontario.

The cultivation of barley is just now receiving much attention in the Province. Professor Saunders, Director of the Central Government Experimental Farm, Ottawa, demonstrates that Manitoba barley is the best on the Continent. It is a noteworthy fact that the cereals of Manitoba and the North West possess a higher degree of germinating power than the grains of any other part of the continent.

Potatoes and all kinds of field and garden roots grow to a large size and in great abundance. The same remark applies to cabbages and other garden vegetables. Tomatoes and melons ripen in the open air. Hops and flax are at home on the prairies. All the small fruits, such as currants, strawberries, raspberries, etc., are found wild in abundance; and experiments are being made for the introduction of apples, pears and other large fruits.

For grazing and cattle raising the facilities are unbounded. The prairie grasses are nutritious and in illimitable abundance. Hay is cheaply and easily made, and as a consequence stock raising and dairying are making great strides.

Trees are found along the rivers and streams, and they will grow anywhere very rapidly, if protected from prairie fires. Wood for fuel has not been very expensive, and preparations are now being made for bringing coal into market; of which important mineral there are vast beds further west, which will immediately be brought into use. The whole of the vast territory from the boundary to the Peace River, about 200 miles wide from the Rocky Mountains, is a coal field.

Water is found by digging wells of moderate depth on the prairie. The rivers and coolies are also available for water supply. Rain generally falls freely during the spring, while the summer and autumn are generally dry.

Speaking of the grain and stock raising possibilities of Manitoba, United States Consul Taylor, a former resident of the province said: "The Northern Zone is specially adapted to wheat growing and cattle raising. That includes Canada, Wisconsin, Michigan



partially, and Minnesota; but three-fourths of the great wheat producing belt of the continent lay north of the (U. S.) boundary. There the future bread supply of America, and of the old world too, would be raised. In his opinion the beef raised in this northern district would be found to be superior in quality to any that could be raised even on the plains of Texas and the adjoining States."

This opinion has since been fully confirmed by the progress the province has made in grain growing and stock raising.

In order to promote scientific and experimental agriculture in the province, the Dominion Government established an Experimental Farm of 640 acres near Brandon in 1888.

There are other fields besides agriculture in which enterprise may find a profitable reward in Manitoba, and in the annual report for last year of the Winnipeg Board of Trade, Mr. Chas. N. Bell called attention to the following subjects: The manufacture of the flax straw, which now is destroyed, offers a field for investors; as does the development of the coal beds of the west; the immense deposits of rich iron ore at Lake Winnipeg; the salt and petroleum deposits near Lake Winnipegoosis; the building stone and lime materials, which, in unlimited quantities, are within easy reach of the city; the brick clays; the straw for paper making; poplar for wood pulp, &c., &c. Little effort has yet been made to draw attention to the value of our lake fisheries, though the whitefish from Lake Winnipeg are shipped to all the Western American cities, as far distant as Kansas City. In addition to lakes Winnipeg, Manitoba and Winnipegoosis having an area of 13,000 square miles, we have, in the Northwest, not less than 40,000 square miles of lake surface, affording an abundant fish supply, which has not yet been drawn on, save by the Indians and fur traders.

MISCELLANEOUS STATISTICS OF MANITOBA.

The quantity of land taken up for actual settlement in Manitoba in 1888 was in excess of any year since 1882. About 330,000 acres were taken for homesteads at pre-emptions and sales, and the various land companies sold 180,000 acres, making 510,000 acres; or including sales by private individuals fully 600,000 acres. Over 17,000 immigrants came into the province during 1888.

	1871.	1882.	1886.
Population of Province	19.000	65,958	108,640
" Winnipeg	241	7,895	21,000
Schools in Province—Protestant	16	150	484
" " Catholic	17	34	65

	1871.	1882.	1886.
School children in Province—Protestant	unknown	4,919	14,300
" " " Catholic	"	3,193	4,188
" " Winnipeg—Protestant	30	1,101	3,683
" " " Catholic	unknown	477	920
Educational grant from Government		$20,000	$66,000
Railways built—miles		65	998
Railway Stations		6	103
Post Offices			500
Bridges		None	400

	1882.	1886.	1887
Export of wheat, bush	None	3,000,000	13,000,000
Export of flour, sacks	"	383.600	484,000
Export of Potatoes, bushels	"	None	110,000

Total Export of Cereals in 1887, nearly 25,000,000 bushels.

	1881.	1886.
Owners of Land	8,742	16,531
Acres Cultivated	250,416	752,571
Horses and mules	14.189	29,150
Colts and fillies	2,229	8,335
Cows	20,296	46,208
Other horned cattle	27,611	84,675
Sheep	6,071	16,053
Swine	17,282	101,490
Home-made butter lbs.	957,152	3.469,524
Home-made cheese lbs.	19,613	74,825

The addition to the number of cows, horned cattle, sheep, pigs, and the large manufacture of butter and cheese indicates that Manitoba farmers have given up relying upon wheat alone, and are engaging to a larger extend in what known as mixed farming.

IMMIGRATION.

The foltowing information on this subject is given in an immigration guide to Manitoba.

"The people whom we most urgently invite to come and make their homes among us are FARMERS and farm servants from the old country, with a little money to start them on homesteads or farms of their own, and who are prepared to try and adapt their habits and style of work to the conditions of a new country. Former experience will be of great value as far as it goes, but this is a new country, and those who come to it must be prepared to take up

MANITOBA FARM IN HARVEST TIME.



modes of farming conformable to the climate and soil. The wider your range of former experience the more likely you will be to succeed here, and by reading our farm periodicals, and careful observation of the practice of your neighbors, you will in a short time get familiar with your work and the best way of setting about it.

Country tradesmen, especially blacksmiths well up in horse shoeing and machine repairing are useful and generally prosperous settlers. Servant girls, such as dairy women and household servants, can always command good wages, and from $12 to $16 per month will readily be paid to all such who may come along at any time of the year, and be sure of a prompt engagement. Some girls are paid more than the figures above named, but we wish to be carefully accurate, a point on which some who write for immigration purposes are not excessively scrupulous.

For carpenters, tinsmiths, blacksmiths, upholsterers, plasterers, bricklayers and masons there will be a considerable amount of work, both at Winnipeg and outside towns, but there will be no "boom" in building to cause a rise above the present rates at $2.50 to $3.50 per day. The demand for employees in the finer trades is necessarily very limited, and no one should come here who has not first satisfied himself that his work is likely to be in request, unless he has a definite engagement with some reliable employer.

The best time to come is in April and May, and if in circumstances to start at once, an active man may prepare, in his first season, land enough to grow from 500 to 1,000 bushels of wheat in the following season. The man most likely to succeed is the man who can buy, say, six cows, a team of oxen, plow, wagon, etc. The cattle will pick up their own food ; the cows will, if good, suckle two calves each, or give butter enough to provide groceries for a family, and bring up the calves on the skim milk after they have had six weeks good milk. Their food costs nothing ; the land will be put in shape, say 20 acres at least, for next year's seeding ; hay cut, and a small shanty of logs or frame building put up before winter comes along to stop field work. The care of his stock, and cutting and collecting fuel, will give the farmer regular employment all the winter round, while the man who goes for wheat alone will be idle a good part of his time, and liable to the loss of part of the year's earnings—by having all his eggs in one basket. Mixed farming is the best every way, both for the farmer and the country ; with a few



fowls and a brood sow, a first year's farmer, starting as here advised will rub along and find his farm to almost support him from the first start. There is no magic in Manitoba farming. A cow, a plow, an ox, and a man with the will and the skill to turn these three forces to the best account, are what we rely on to bring out the rich resources of our soil."

LANDS.

Lands in Manitoba may be acquired in two ways : Free grants, or homesteads of 160 acres may be obtained from the Dominion Government, and land may be purchased from any of the large land corporations, and from private individuals.

Free grants of 160 acres may be obtained of the Dominion Government in many parts of Manitoba. It is said there are still about 2,000,000 acres of surveyed homestead lands available for entry. In many parts of the Province there are not now any free homesteads, these having all been taken up in years gone by, and the country thriftily settled ; but scattered throughout the Province, and especially in the northwesterly and southwesterly portions, there are still a number of desirable homesteads for selection. It is estimated there are also about 8,000,000 acres of unsurveyed homestead lands in the Province. Information on this subject will be found on pages 52 to 59 in Section I. of this work.

There are in the Province lands aggregating several millions of acres, at prices varying from $3 to $5 an acre, while lands can be bought from private parties in most parts of the province. The Manitoba Government has no interest in the sale of these lands, but the Department of Agriculture at Winnipeg will give information to intending settlers corcerning them.

In concluding this brief sketch we may quote with pride the following extract from the prophetic speech made by Lord Dufferin, on first viewing the infant province in 1877 : " From its geogra-
" phical position, and its peculiar characteristics, Manitoba may be
" regarded as the keystone of that mighty arch of sister provinces
" which spans the Continent from the Atlantic to the Pacific. It
" was here that Canada, emerging from her woods and forests, first
" gazed upon her rolling prairies and unexplored North-West, and
" learnt, as by an unexpected revelation, that her historical territo-
" ries of the Canadas, her eastern seaboards of New-Brunswick,
" Labrador, Nova-Scotia, her Laurentian lakes and valleys, corn



" lands and pastures, though themselves more extensive than half-a-
" dozen European kingdoms, were but the vestibules and ante-
" chambers to that, till then, undreamt of Dominion, whose illimit-
" able dimensions alike confound the arithmetic of the surveyor and
" the verification of the explorer.

" It was hence that, counting her past achievements as but the
" preface and prelude to her future exertions and expanding desti-
" nies, she took a fresh departure, received the afflatus of a more
" imperial inspiration, and felt herself no longer a mere settler along
" the banks of a single river, but the owner of half a continent, and
" in the magnitude of her possessions, in the wealth of her resour-
" ces, in the sinews of her material might, the peer of any power
" on earth."



Section VIII.

THE NORTH WEST TERRITORIES.

The year 1886 marked a new era in the development of the Canadian nation by the laying of the foundations of three future provinces in the confederation. An act was passed making provision for three districts or territories in the region lying between Manitoba and British Columbia, and the step was confirmed by an act of the Imperial parliament, which not only sanctioned these creations, but gave to the Dominion parliament the power to erect any new territory or province, in the yet unsettled parts of the great West and North. The act invests the Dominion with the essential attributes of sovereignty over the entire domain of British North America. To the three provisional territories has been added a fourth (Athabasca), their names and areas being as follows :

Assiniboia	95,000	square miles.
Saskatchewan	114,000	" "
Alberta	100,000	" "
Athabasca	122,000	" "

A census taken in Aug., 1885, gave the total population of the three territories first named at 48,362 (of whom 20,170 were Indians), and it was estimated that Athabasca and the contiguous regions contained about 30,000 inhabitants. The official estimate of the population for 1888 was 100,000. The local government of all three territories is administered by a Lieutenant Governor, and a council composed of 20 members, partly elective and partly nominated by the Privy Council of the Dominion Government. As soon as a district of 1,000 square miles contains a population of 1,000 souls, exclusive of aliens and Indians, it will become an electoral district and return a member. There is also now a legislative assembly, consisting of 22 members elected by the people, and three officers appointed by the Governor in council; this assembly to have an advising council of seven, of whom four are nominees of the Lieutenant Governor. The first election under the local act took place in 1888. The districts of Alberta and Saskatchewan—

return one member each to the Dominion House, and Assiniboia two members. The franchise in these territories is conferred upon every male who is a bona fide resident and householder (Indians and aliens excluded), and who has resided in the district for a year before the election. The voting is open, and not by ballot as in the provinces; and voters may be required to take oath as to their qualification and as to whether they have been bribed to vote. The government is administered at Regina, in Assa., the Lieut-Governor's establishment consisting of a secretary (who is secretary also to the assembly), an Indian commissioner, a commissioner of police, with Supreme Court of five Judges, four registrars and five sheriffs.

The land of the territories is chiefly rich prairie, interspersed with woodlands. The country is drained by the great Saskatchewan, Athabasca and Peace rivers, and contains over 10,000 miles of navigable river, besides their tributary rivers and streams. In addition to their inestimable wealth of agricultural lands, the territories contain unmeasured beds of the best anthracite coal, with vast deposits of petroleum; while iron, gold, silver, galena, copper and other minerals are being discovered.

The appended information is taken from the returns of the special census of 1885. Total occupiers of land in 1881 estimated at 1,014, with 314,107 acres occupied and 28,833 cultivated; in 1885 the number was 6,987, acres occupied 3,681,818, acres cultivated 195,985. Out of about 16,500 people engaged in occupations on their own account, 8,388 were in agricultural pursuits, 3,196 were hunters, 132 merchants and bankers, 750 in the various trades, and 155 clergymen. The following is an estimate of the capital, hands employed, etc., in the various trades in 1881 and 1885:—

	1881.	1885.	Increase.
Capital invested	$104,500	$771,451	$666,951
Hands employed	83	546	463
Yearly wages	35,425	186,917	151,492
Value of raw material	79,751	518,428	438,677
" articles produced	195,938	1,029,235	833,297

The following shows the agricultural products in the two years:—

	1881.	1885.
Horses and mules	10,870	24,456
Working oxen	3,334	5,949
Cattle	9,538	80,587
Sheep	346	19,398

MAP

Showing limits of pack-ice in the Arctic Ocean and Behring Sea,

[redacted]





[redacted] one member each to the Dominion House and Assiniboia

	1881.	1885.
Pigs	2,775	22,542
Pounds butter made	70,717	510,191
" cheese "	1,060	10,270
Wheat, bushels	119,655	1,147,124
Barley "	48,445	257,479
Oats "	59,952	1,045,950
Potatoes "	89,326	479,702
Hay, tons		116,000
Peas, beans and rye, bush.	1,531	12,420
Turnips and other roots. bush.	17,984	219,527

The furs and pelts reported by the traders in 1885 were 194,208, of which 5,837 were beaver, 812 bear, 4,937 fox, 15,959 mink, 4,546 deer and antelope, 143,788 muskrat, and the rest buffalo, fisher, lynx, marten, otter, skunk, wild-cat, wolf, wolverine, cariboo, moose, etc. There were also reported 3,713 barrels of fish caught, but this is probably far under the actual catch. The foregoing figures do not include Athabasca, in which the census was not taken.

The number of cattle, sheep, etc., in these territories has increased vastly since then, many individual ranching companies having 20,000 to 50,000 head of live stock on their ranches. In 1887, the first shipments of cattle direct from these districts to England were made, and bid fair to attain large proportions.

The report of the North West Board of Education for 1886 showed that there were 16 first class, 36 second class, and 43 third class certificated school teachers, against 9 first class, 20 second class, and 20 third class teachers in 1885. Besides these there were in 1886 a number holding "provisional" certificates. Among the schools of the districts there were eight, the attendance at which ranged from 77 to 189. The report for 1887 showed that in that year there were 106 Protestant schools, 4 public schools, and 23 Roman Catholic schools, having in all 2,747 pupils; and in 1888 there were 132 Protestant schools, 6 public schools, and 29 Roman Catholic schools with a total of 4,209 pupils. The North West Board of Education consists now of eight members, partly Protestant and partly Roman Catholic, besides the Lieut-Governor, who is chairman. Schools in the territories are free. Any district of country not more than 36 square miles in extent, and containing four heads of families and ten children of school age (5 to 16 years), may establish itself in a school district on petition to the Lieut-Gover-



nor, and when established is entitled to a government grant of $250, $300 or $350 a year, according to the class of certificate held by the teacher. There is an additional capitation grant of $2 for each pupil attending 100 days, or $2.50 for each pupil attending 160 days, where the school is opened both winter and summer terms. Other extra grants are allowed on the favorable report of the inspector and where extra teachers are required on account of large attendance. It is proposed to establish in 1889 a high school at Regina, at which scholars of the territories may be qualified as teachers.

A paragraph in an article in the *London Morning Post*, by Dr. Fream, well illustrates the diversity of immigrants by whom the new territories are being settled :—

"Scattered over the country which lies between Moosomin, a few miles within the North-West Territories, and Regina, the capital, a distance of 150 miles, are a very remarkable number of settlements. There are many great cities from London to Cairo which are as cosmopolitan in their constituents as was the assembly in the first Whitsuntide, but there is probably no other rural tract of country in the world which contains as many nationalities as does that we have just entered. Near Moosomin are settlements of Scotch crofters, and of Lady Burdett-Coutts's East-enders. A little north is a colony of Russian Jews. Then, going westward, come settlements of Bohemians, Hungarians, Scandinavians, Icelanders, French Canadians, Germans, Roumanians, and more Crofters. Going back to the south of the line, there is near Moose Mountain a highly respectable English colony, and a settlement of French people from France who have with them Dr. Meyer, who was associated with Count von Arnim. At Qu'Appelle, twenty miles distant from the old Hudson's Bay fort of that beautiful name, and thirty miles east of Regina, are several important Indian reserves. The representatives of these varied European races seem, from all accounts, to live in harmony with their neighbors, and to be thriving. At a gathering at New Stockholm seven different nationalities were represented, and speeches were made in four different languages. It is possible that the children of the youngest of the new colonists will speak only one, as, unlike the French Canadians, these people, notably the Swedes, are most desirous of learning English."

ASSINIBOIA.

This territory lies immediately west of Manitoba, with Saskatchewan on its northern boundary, Alberta on the west, and having the American boundary line for its southern limit. The territory occupies the second of three great plateaux or prairie steppes into which the vast North West is divided by nature. The territory, which is traversed by the Canadian Pacific, includes the famous valley of the



Qu'Appelle, and is being rapidly settled by grain farmers and stock raisers, among whom is the thriving colony of Scottish crofters, sent out by Lady Gordon Cathcart. At the special census of 1885 the territory,—which was divided into six districts, called as follows after the principal towns and settlements: Broadview, Qu'Appelle and Regina, Moose Jaw, Swift Current, Maple Creek and Medicine Hat—had a population of 22,083, of whom 13,324 were males and 8,759 females. The three most populous districts were Qu'Appelle and Regina, Broadview and Moose Jaw in the order named. The total area under cultivation was only 160,133 acres out of 1,641,752 acres nominally occupied.

To promote the interests of agriculture in the three territories, the Dominion Government established an experimental farm in 1888 at Indian Head, 44 miles east of Regina, in Assiniboia.

SASKATCHEWAN.

Saskatchewan is bounded on the north by the unsurveyed North Western Territory, on the east by Lake Winnipeg and Nelson River, on the south by Assiniboia and Manitoba, and on the west by Alberta. It is traversed from west to east by the great Saskatchewan river and its branches. The census of 1885 gave the population of its three divisions of Carrot River, Prince Albert and Battleford, as follows: males 5,447, females 5,299: total 10,746. Lack of railway communication has been the only drawback to this district, but three railway enterprises are afoot to open up the district for settlement and give an outlet to its many products. The district is diversified with prairie, mountains, woodlands, rivers and lakes in a remarkable way. It has within its borders hundreds of lakes varying in size from thousands of square miles to small ponds; and nearly all well stocked with fish.

ALBERTA.

This territory is bounded on the north by Athabasca, on the east by Saskatchewan and Assiniboia, on the south by the American territory of Montana, and on the west by British Columbia. The census of 1885 gave the following population in its three divisions of Edmonton, Calgary, Red Deer and McLeod: males 8,342, females 7,191, total 15,533. Alberta occupies the third of the three great steppes of the North-West, and having the Rocky Mountains for



its western border, is possessed not only of magnificent scenery, in addition to a fertile soil, but is known to be rich in minerals and timber. Dr. Dawson found in four square miles of country about the Bow and Belly rivers four seams of coal aggregating 24,400,000 tons of workable coal. There is thus, says a writer, "under one square mile of territory a sufficiency of coal for a large population in the North West to last a generation; and whether the coal fields are continuous or not, there are many thousands of square miles of them." Mr. J. B. Tyrrell estimates that two areas he examined contain 290,000,000 tons of lignite coal. The coal is both anthracite and bituminous, and is now being successfully mined at two or three points to which access has been gained. One of these, the Galt mine at Lethbridge, is connected with the C.P.R. by a railway of 109 miles long, and this company, at whose head is Sir Alex. Galt, are preparing to run a branch to Montana to supply coal to that market. Every season brings reports of the discovery of new minerals, which will be utilized when the proposed railways are constructed. Cattle ranching has become an extensive industry in Alberta, and dairying and general "mixed" farming is now being developed as in the older province of Manitoba. There are now over 2,500,000 acres leased in this district for grazing purposes, there being about 70 ranching companies. Among the proposed railways, one is to be built in 1889, extending from Regina to Saskatoon, thence to Battleford and Edmonton, with a spur line to Prince Albert.

ATHABASCA.

Athabasca lies to the north of Alberta with the unsurveyed territory on its north (at latitude 60) and on the east, and British Columbia on the west. It extends east and west from the Athabasca river to the 120th parallel of latitude. It was not included in the scope of the census of 1885, and awaiting the introduction of railways has not been settled to any extent. Through this territory runs the great Peace river, as well as the Loon and Athabasca rivers, and its climate, owing to its lessened altitude above the sea and to the influence of the Chinook winds, is as mild as the other three territories. Though but little explored, immense deposits of coal, petroleum, gypsum and other minerals are known to exist within the territory, and many of the observations made in the chapter on the Mackenzie river basin are specially applicable to this territory.



NATIONAL PARKS.

In 1885–86 the Dominion Government reserved five different tracts of land in and about the Rocky Mountains as future national parks. These were: a park at Mount Stephen, including the country surrounding the base of the mountain and adjacent picturesque points; a reservation near Mount Sir Donald; an area in the Eagle Pass sufficient to include Griffin and Three Valley lakes, and adjoining points of interest; an amphitheatre at the summit of the Selkirks near the railway; and a tract around the hot springs of Banff. The last named is the only one now being laid out. The selection of this site for a national park was made in consequence of the discovery of several hot mineral springs possessing remarkable curative properties, and the subsequent discovery of many striking features of beauty in the surrounding scenery. A tract of 260 square miles or 166,400 acres—an area more than three times that of the four Channel islands of Jersey, Guernsey, Alderney and Sark—was set apart around the springs, on such a plan as to take in some peaks of the Rocky Mountains, and to include within its limits an aggregation of mountain, valley, river, lake, glen, waterfall and wildwood scenery unique in the parks of the world. The mineral springs rise in a mountain called Sulphur Mountain near Banff station, at a point about 4,500 feet above the sea, and near the confluence of the Bow and Spray rivers. There are several hot springs with water ranging in temperature from 80° to 125°; the principal of these issues out of a large cave about 25 feet across and 30 or 40 feet high, and having in its roof pretty forms of stalactites, from some of which cool water falls in sufficient quantities to make a shower-bath. This has been made into a bathing pool, and a hundred feet from it is another natural pool in the open air, in which the warm water oozes up through the sands. The cave spring discharges several streams which leave no discoloration of the soil, but the waters of the other spring leave a deposit as white as flour. It proves to be a magnesiate of lime impregnated with iron and sulphur. The several springs have different medicinal properties, but the principal elements are sulphuric and carbonic acids, lime, magnesia and soda. A chemical analysis of the water of one of the springs gave the following result, expressed in parts per 100,000 parts of water: calcium sulphate 56.35, magnesium sulphate 12.39, calcium carbonate 3.29, sodium sulphate 15.60, sodium carbonate

35.73, with traces of silica. The correspondent of the *Illustrated London News*, writing of the Springs in 1888, said :—

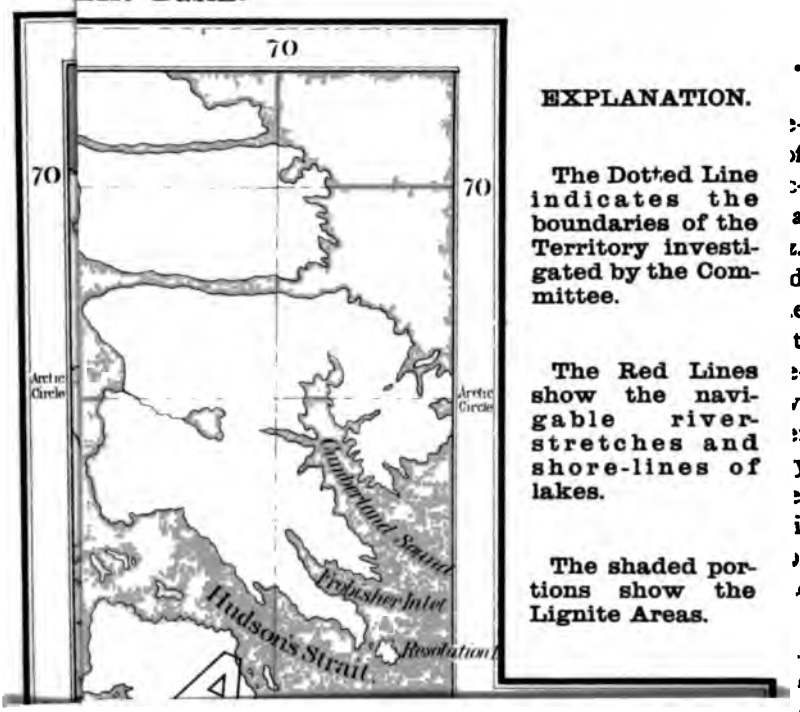
"They have proved of the most striking benefit to those suffering from various forms of rheumatic affections, scrofulous tumours and skin diseases, malarial poisoning of long standing, anæmia, and the troubles which have their seat in weakness of constitution or general debility. By allaying muscular and nervous irritability through their soothing influences on the peripheral nerves, sciatica and other neuralgias are greatly benefited. Owing to the saline qualities of some of the springs, certain complaints of the kidneys and liver, renal and biliary calculi, and catarrhal affections of various mucous membranes, are successfully treated."

The clear, pure and bracing air of the mountains is also a great aid to the curative effects of the springs. The daily flow of water from the principal spring is 500,000 gals.

The scenery of the place is described in glowing terms by travelers. The mountains rise at some points 4,000 to 5,000 feet above the neighborhood of the Springs; and the Bow river in places breaks through perpendicular walls of rock 200 feet high, and forms in a course of 140 yards cascades of 60 feet fall. From a dozen snow crowned mountain peaks, numerous streams pour down, forming navigable rivers and lakes in the valleys, where fish in abundance can be caught; while among the forests, game birds and animals exist at present in astonishing numbers, and will no doubt continue for many years if not recklessly destroyed. An official report in 1886 mentioned 29 species of wild animals, 31 kinds of birds, and 16 varieties of fish as found within the limits of the park. A nursery is now being formed for the cultivation of the native trees, shrubs and flowers of this region.

The sites of two towns are laid out, roads are being built to the principal lakes, and several hotels with bathing houses attached exist at the springs. Within twenty months after the Government began to make the improvements, there was a resident population of 650, and over 5,800 visitors were registered in 1888.

nzie Basin.



EXPLANATION.

The Dotted Line indicates the boundaries of the Territory investigated by the Committee.

The Red Lines show the navigable river-stretches and shore-lines of lakes.

The shaded portions show the Lignite Areas.





THE GREAT MACKENZIE BASIN.

A document of great importance to the student of Canada's resources was laid before the Dominion Parliament at the session of 1888, in the form of a report on the "Resources of the Great Mackenzie Basin," being the result of the enquiries and researches of a committee of the Senate, presided over by the Hon. John C. Schultz. The facts have been received by the Press of Great Britain and America as a new revelation, not only of the vast extent of habitable country in this hitherto unknown region of Canada, but of its vast fresh water areas and great natural resources. This revelation derives an additional interest from the fact that the region was discovered just 100 years ago (in 1789), by Alexander Mackenzie, after whom the river was named. The scope of the committee's enquiry covers an area of 1,260,000 square miles, all outside of the region yet settled, and still not including any of the islands of the Arctic Archipelago. It forms a tract greater that the Australian continent, or two-thirds of Europe. The coast line of this vast territory is found to measure 5,000 miles, exclusive of the lines of deeply indented bays; it has a river navigation of 2,750 miles, and a continuous lake and river navigation of 6,500 miles, a distance of more than twice across the Atlantic. Of this vast distance 1,360 miles would be suitable for light draught seagoing steamers, and the whole stretch has but two breaks, which it is said can be overcome by improvement of the rapids. The Mackenzie River is alone 2500 miles long; and exceeded only on this continent by the Mississippi. The navigable coast line of these lakes alone is not less than 4,000 miles, while more accurate measurements will probaly show that the total lacustrine area of the Mackenzie Basin exceeds the whole of the great chain of lakes which divide Canada from the United States, and which of themselves contain over half the known fresh water area of the rest of the world. It is thought that with proper vessels this whole region may be directly connected with Victoria and Vancouver by way of the mouth of the Mackenzie, as it is now connected in the South, by 90 miles of waggon road, with the navigable waters of the River Saskatchewan. The committee make a summary



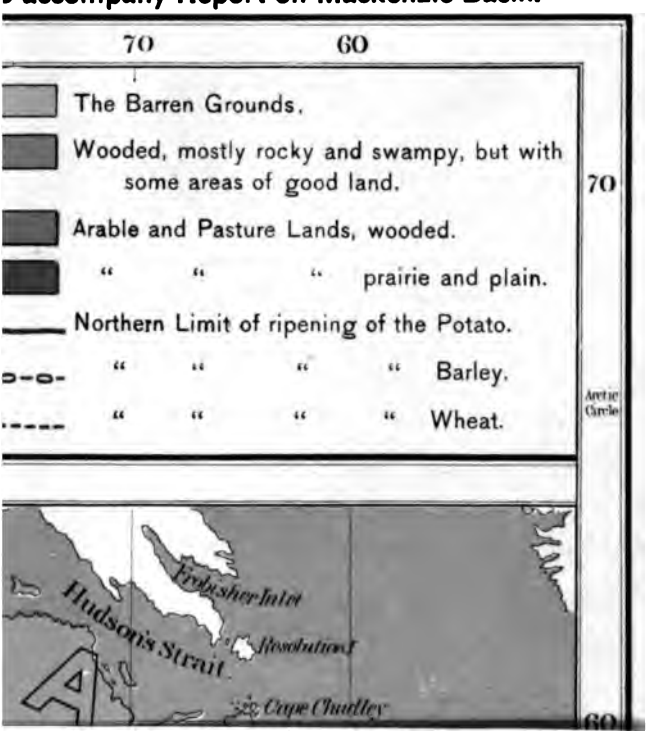
based on the evidence of reliable witnesses,—many of them officers of the Hudson Bay Co.—of the characteristics of the great basin, from which the following are extracts :

"Within the scope of the Committee's enquiry there is a possible area of 656,000 square miles fitted for the growth of potatoes, 407,000 square miles suitable for barley, and 316,000 square miles suitable for wheat. There is a pastoral area of 860,000 square miles, 26,000 miles of which is open prairie with occasional groves, the remainder being more or less wooded ; 274,000 square miles, including the prairie, may be considered as arable land. About 400,000 square miles of the total area is useless for the pasturage of domestic animals or for cultivation, this area comprising the Barren Grounds and a portion of the lightly wooded region to their south and west. Throughout this arable and pastoral area latitude bears no direct relation to summer isotherms, the spring flowers and the buds of deciduous trees appearing as early north of Great Slave Lake as at Winnipeg, St. Paul and Minneapolis, Kingston, or Ottawa, and earlier along the Peace, Liard and some minor western affluents of the Great Mackenzie River, where the climate resembles that of western Ontario. The native grasses and vetches are equal and in some districts superior to those of Eastern Canada. The prevailing south-west summer winds of the country in question bring the warmth and moisture, which render possible the far northern cereal growth, and sensibly affect the climate of the region under consideration as far north as the Arctic circle and as far east as the eastern rim of the Mackenzie Basin.

The forest area has upon it a growth of trees well suited for all purposes of house and ship building, for mining, railway and bridging purposes, far in excess of its own needs, and of great prospective value to the treeless regions of Canada and the United States to the south, the growth on the Laurentian formation being scant, but the alluvial portion has upon it (on the river of its name and elsewhere) the "Liard," a balsam poplar, sometimes called Balm of Gilead or rough bark poplar, 120 feet high, with a stump diameter of 5 to 6 feet. The *white spruce*, 150 feet high, with a stump diameter of 4 to 5 feet; the *larch*, of about the same size, and the *banksian pine*, whose straight stem is often 100 feet long, with only two feet of diameter at the stump.

Of the mines of this vast region, little is known of that part east of the Mackenzie River and north of Great Slave Lake. Of the

cultivation of Potatoes, Barley and Wheat.
o accompany Report on Mackenzie Basin.



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western affluents of the Mackenzie, enough is known to show that on the headwaters of the Peace, Liard and Peel Rivers there are from 150,000 to 200,000 square miles which may be considered auriferous, while Canada possesses west of the Rocky Mountains a metalliferous area, principally of gold-yielding rocks, thirteen hundred miles in length, with an average breadth of four to five hundred miles, giving an area far greater than that of the similar mining districts of the neighboring Republic.

In addition to these auriferous deposits, gold has been found on the west shore of Hudson's Bay, and has been said to exist in certain portions of the Barren Grounds. Silver on the Upper Liard and Peace Rivers, copper upon the Coppermine River, which may be connected with an eastern arm of Great Bear Lake by a tramway of 40 miles, iron, graphite, ochre, brick and pottery clay, mica, gypsum, lime and sandstone sand for glass and moulding, and asphaltum, are all known to exist, while the petroleum area is so extensive as to justify the belief that eventually it will supply the larger part of this continent and be shipped from Churchill or some more northern Hudson's Bay port to England. Salt and sulphur deposits are less extensive, but the former is found in crystals equal in purity to the best rock salt and in highly saline springs, while the latter is found in the form of pyrites, and the fact that these petroleum and salt deposits occur mainly near the line of division between deep water navigation and that fitted for lighter craft, gives them a possible great commercial value. The extensive coal and lignite deposits of the lower Mackenzie and elsewhere will be found to be of great value, when the question of reducing its iron ores and the transportation of the products of this vast region have to be solved by steam sea-going or lighter river craft.

The chief present commercial product of the country is its furs, which, as the region in question is the last great fur preserve of the world, are of very great present and prospective value, all the finer furs of commerce being there found, and the sales in London yearly amounting to several millions of dollars. The Indian population is sparse, and the Indians, never having lived in large communities, are peaceable, and their general character and habits as given by witnesses justify a hope that the development of the country, as in the case of the Indians of British Columbia, may be aided by them without great danger of their demoralization and with a



reasonable hope that, as in the case of the Indians mentioned, their condition may be improved.

The Committee, very early in their investigations, became convinced that very little more was known of the northern and eastern portion of the area committed to them for investigation than was known of the interior of Africa or Australia. Arctic explorers had indeed traversed its coast line and descended two of the rivers which, east of the Mackenzie, flow into the Arctic Sea; but the object sought by them was one which had no relation to that of the present enquiry, and it is only incidently that their records are now valuable. The knowledge of missionaries and officers of the Hudson's Bay Company is chiefly confined to the watercourses and the great lakes, while scientific exploration has not as yet extended north of Great Slave Lake.

In referring again to the navigation of this region, all the evidence has agreed as to the great extent of unbroken navigation, and this fact has been of great use to the Hudson's Bay Company, who have always used the waterways, even when circuitous and difficult, rather than resort to land carriage, and their inland posts to as far north as the Arctic circle are now supplied from their central depot at Fort Garry with only 114 miles of land carriage, four of this being by tramway at the Grand Rapids of the Saskatchewan, ninety miles of waggon transport from Edmonton to Athabasca Landing, thence by steamer and flatboat to Fort Smith on the Great Slave River, where twenty miles of wagon road connects the shallow with deep water navigation, and the steamer "Wrigley" distributes them to the various posts down to the mouth of the Mackenzie just above it estuary, where the river is said to be six miles wide, and up Peel River, which joins the Mackenzie, near that point to Fort Macpherson on that gold-bearing stream. The great lakes which receive the drainage of this vast region, and give an equal flow to the Mackenzie, all have deep water navigation, and like most lakes of the Laurentian formation are studded with islands.

The most southern source of the Great Mackenzie River is a stream fed by the glaciers of Mounts Hooker and Brown, two of the highest of the Rocky Mountain chain, in latitude 52° 30,' and this soon becomes a navigable stream, preserving that character except at the breaks mentioned, during the nearly 2,500 miles of it course to the Polar Sea. As already mentioned these western



affluents will form valuable links as a means of taking in machinery and mining supplies to the upper waters of the Peace and Liard Rivers, which are now inaccessible for heavy machinery from the west coast, and the cost of taking in provisions makes in mining and prospecting efforts a serious desideratum. The navigation upon the Liard River also will be an important factor in the future food supply to the great mining region of the upper Yukon and Peel Rivers.

A reference to the valuable evidence obtained by the Committee will show that navigation from Behring Straits to the mouth of the Mackenzie, and probably as far east as Wollaston Land, may be had for three months in each year, the soundings given on the Admiralty Chart of that portion of the Arctic Sea revealing an average depth of about 20 fathoms, which is a considerable depth in what is known to be generally a shallow sea.

A good deal of difficulty has been experienced by the Committee in endeavoring to obtain the exact catch of furs in the region under consideration, and no definite or direct information has been obtained; they have, however, obtained lists of furs offered for sale in 1887, in London, by the Hudson's Bay Company and C. M. Lampson & Co., the consignee of many of the furs of British North America, and from these lists they find the following to be a summary of one year's catch :—

Otter	14,439	Musquash	2,485,368
Fisher	7,192	Extra black Musquash	13,944
Fox (silver)	1,967	Wolf	7,156
Fox (cross)	6,785	Wolverine	1,581
Fox (red)	85,022	Bear (all kinds)	15,942
Fox (white)	10,257	Musk ox	198
Fox (blue)	1,440	Badger	3,739
Fox (kitt)	290	Ermine	4,116
Lynx	14,520	Swan	57
Skunk	682,794	Rabbit	114,824
Marten	98,342	Hair seal (dry)	13,478
Mink	376,223	Sable	3,517
Beaver	104,279	Fox (grey)	31,597

It will be seen by those who have a knowledge of the great value of these rich northern furs, a large proportion of which may be presumed to have come from the Mackenzie Basin, how large and important that trade has been, and it is expedient that, without unduly interfering with the rights of settlers or the usual privileges of Indians, this great fur trade should be fostered and even made a source of direct revenue to the Dominion.

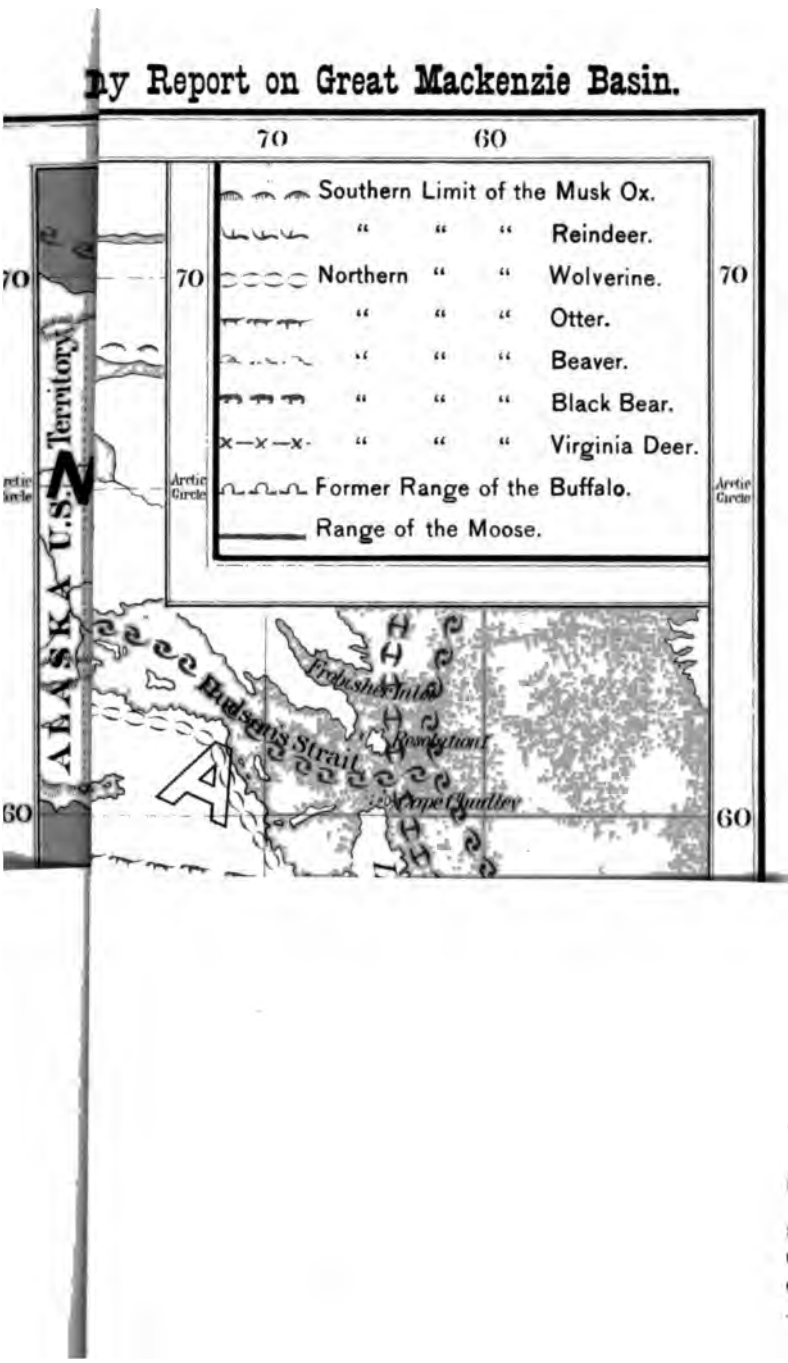


Of the fresh water food fishes of the region, Back's "Grayling," an excellent species not prevalent elsewhere, seems to be found everywhere in its rivers, and even west of the Rocky Mountains; but the staple product of its lakes and large rivers seems to be whitefish of great weight and excellent flavor, and trout often reaching forty pounds in weight, and evidence goes to show that the farther north the greater the yield of fish till the quantity becomes enormous. As an illustration the following is given from the evidence of Prof. Macoun, who quotes Sir John Richardson to the effect that one of the early overland Franklin expeditions took fifty thousand whitefish on a north-eastern arm of Great Bear Lake, and Sir John Richardson also states that the great lake trout swarm in all the northern great lakes.

It would appear from the evidence that salmon are abundant in the rivers and along the coast of the north-west side of Hudson's Bay as well as in the rivers of the northern shores of the continent.

The seas adjoining the great territory which your Committee have had under investigation are frequented by whales of different species, walruses, narwhals and a variety of seals. All these animals are valuable for their oil, but the large species of whales have heretofore been most sought for. Only a few years ago these animals had a much more extensive range than at the present time. Owing to improvements in navigation and methods of capture they have, of late years, fallen an easier prey to their pursuers, and have taken shelter in the less frequented seas of the northern coast of Canada. Now they are being pursued to their last retreat by foreign whalers, and some species are threatened with complete extinction in a few years if this condition continues. It is to be borne in mind that whales are long lived and slow breeding animals. The American whalers attack them with harpoons, explosive bombs and lances, fired from large swivel-guns carried on steam launches, instead of the old-fashioned weapons thrown by hand from rowboats. These methods not only destroy the whales with greater facility, but inspire the survivors with such terror that they seek the most distant and inaccessible parts of the northern seas, and have entirely disappeared from the waters in which they lived only a few years ago.

The evidence submitted points to the existence in the Athabasca and Mackenzie valleys of the most extensive petroleum field in America, if not in the world. The uses of petroleum and conse-


Report on Great Mackenzie Basin.
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Southern Limit of the Musk Ox.
" " " Reindeer.
Northern " " Wolverine.
" " " Otter.
" " " Beaver.
" " " Black Bear.
" " " Virginia Deer.
Former Range of the Buffalo.
Range of the Moose.
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Arctic Circle
ALASKA U.S. Territory
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Frobisher Inlet
Resolution I.
Cape Chudleigh
Hudsons Strait



quently the demands for it by all nations are increasing at such a rapid ratio, that it is probable this great petroleum field will assume an enormous value in the near future and will rank among the chief assets comprised in the Crown domain of the Dominion."

Anyone studying the evidence in this blue book will be struck by the fact that, though the known resources of the territory are wonderful in extent, the investigations have but barely skimmed the country; and what remains to be discovered may far transcend the outline picture we can yet form from the desultory travels of these explorers. Leaving out of question the so-called "Barren Grounds," more than half the immense region of this enquiry is as completely an unknown land to the Canadian public and the outside world as any part of the dark continent. The extraordinary mildness of the climate, as compared with the same latitudes in the eastern part of the continent and elsewhere, is partly due to the low level of the Mackenzie valley (which is only about 300 feet above the sea, as compared with 3,000 or 4,000 feet above the sea in Montana and other American states,—a difference equal to 13° of latitude), and partly to the warm "Chinook" winds. These winds seem to develop from the "gulf stream" of the Pacific, coming over the Rockies, or from the plains of what is called the American Desert, or from both. Dr. Dawson gives the following interesting theory of this:—

"The pressure in the upper regions of the atmosphere being so much less than in the lower, a body of air rising from the sea-level to the summit of a mountain range must expand, and this, implying molecular work, results in an absorption of heat and consequent cooling. The amount of this cooling has been estimated at about 1° Centigrade for 100 metres of ascent when the air is dry, but becomes reduced to ½ degree when the temperature has fallen to the dew-point of the atmosphere, and precipitation of moisture as cloud, rain or snow begins; the heat resulting from this condensation retarding to a certain degree the cooling due to the expansion of the air. When the air descends again on the further side of the mountain range, its condensation leads to an increase of sensible heat equal to 1° C. for each 100 metres. It is owing to this circumstance that places in the south of Greenland, on the west coast, during the prevalence of south-easterly winds, which flow over the high interior of the country, have been found, in winter, to experience for a time a temperature higher than that of North Italy or the south of France, though the North Atlantic Ocean from which the winds come can, at this season, be little above the freezing point. The wind well known in the Alps as the föehn is another example of the same phenomenon.

"The data are wanting for an accurate investigation of the circumstances of our west coast in this regard, but a general idea of the fact may be gained. We may assume that the air at the sea-level is practically saturated with moisture, or

already at its dew point, that in crossing the mountainous region the average height to which the air is carried is about 2,000 metres (6,560 feet), and that it descends to a level of about 700 metres (2,296 feet) in the Peace River country. The loss of sensible heat on elevation would, in this case, amount to 10° C. (18° F.), the gain on descent to a level of 700 metres to 13° C. (23.4° F.). The amount of heat lost by the air during its passage across the mountainous region, by radiation and contact with the snowy peaks, cannot be determined. It is, of course, much greater in winter than in summer, and depends also on the speed with which the current of air travels. Taking the mean summer temperature of the coast at about 12° C. (54° F.), and allowing several degrees for loss by radiation, it becomes easy to understand how the western prairies may be flooded with air nearly as warm as that of the coast, though it has traveled to them over a region comparatively cold."

Besides the Chinook winds and the low level of most of the Mackenzie Basin, another favoring climatic condition is the great length of day in the high northern latitudes, which favors rapid vegetation, and takes the place of extra heat, as we find to be the case in England, for instance. These facts combine to produce in these subarctic regions effects in vegetation, which otherwise would seem incredible to those accustomed to the climatic conditions of eastern Canada.

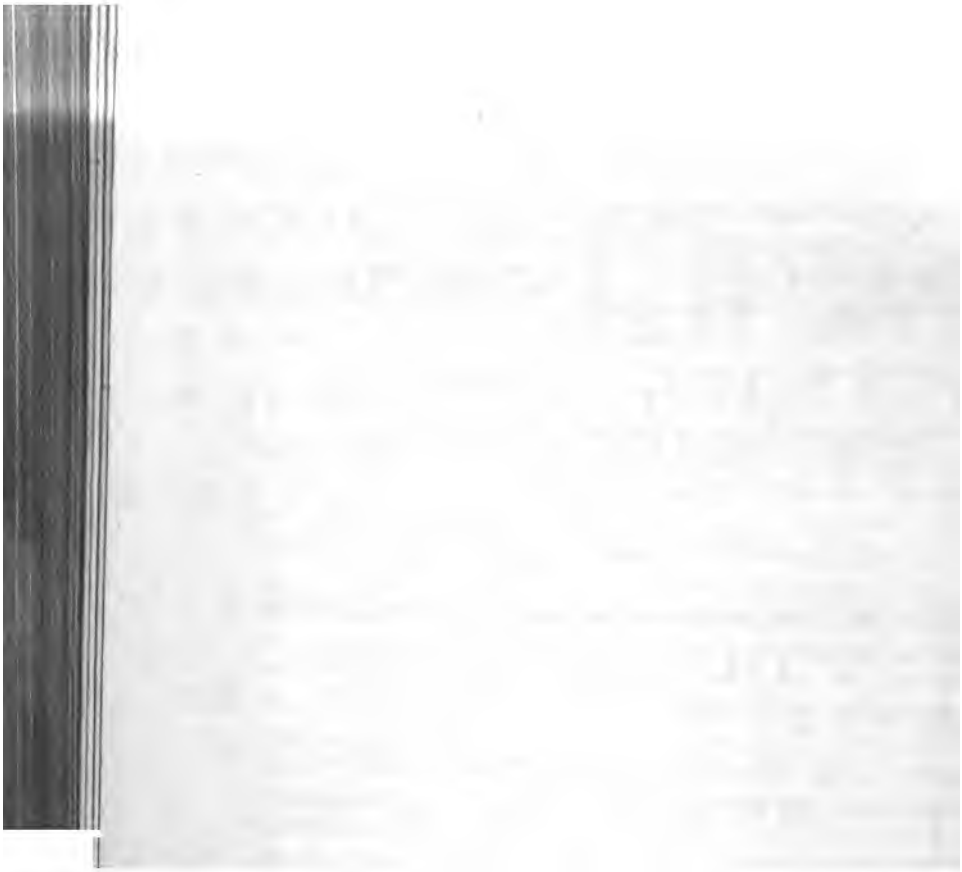
Several witnesses testified to raising wheat here that weighed 68 to 69 lbs. to the bushel, and Prof. Macoun confirms this by adding the interesting statement that the wheat samples, weighing 68 lbs. per bushel, which took the prize at the Centennial Exhibition, were got from swamp land near the Athabasca Mission station in 1875. Among the natural products of these regions, he enumerates 56 species of animals, 32 of fishes, 173 of birds, and 11 kinds of trees, to which cultivation and breeding could add perhaps double the number of species. Among other fruits, apples and grapes will be grown over the whole of this Mackenzie Basin as far north as Fort Liard. At a place called Red River near Fort Vermillion, Prof. Macoun saw "wonderfully luxuriant crops" of pease, Windsor beans, potatoes, cucumbers, wheat and barley, of which he gave specimens to the committee, and over nearly all this great basin found rich crops of those grasses—such as red top and Kentucky blue grass—that are best suited to stock raising. Cattle are now kept as far north as Fort Good Hope. As to the richness of the soil he has seen in many places deposits of alluvial loam reaching to the depth of 100 feet. Another circumstance he mentions as favorable to agriculture is that spring here, unlike in other parts, sets in as "regularly as the rising of the sun."

FAC-SIMILE LETTER

In Syllabic Character received by **BISHOP CLUT**

From a

Mackenzie River Indian





One witness noted that robins appeared at Moose Factory on the 3rd April, and another at Fort Chippewyan that summer birds were common on the 20th and 21st April; and that strawberries, eyeberries and raspberries were ripe on the 12th to 15th July. At Fort Providence, above latitude 63, and at Fort Good Hope, just under the arctic circle (about latitude 66) the Sisters of Charity have fine vegetable and flower gardens, and raise potatoes and barley, and at the former place wheat was grown successfully in 1887, making good flour. Ex-Judge McLeod mentions that at Norway House on the Nelson River, 1000 people are gathered during navigation, and are fed chiefly on the natural products of the region, which at Oxford House, 150 miles north-east in a much colder region than corresponding latitudes in the Mackenzie Basin, there are good gardens kept. Bishop Clut and others who traveled extensively over the Mackenzie Basin mention turnips, carrots, beets, radishes, strawberries, currants, gooseberries, blueberries, cranberries, and other wild berries as commonly grown in the gardens at the mission station, and adds that wheat is successfully ripened all along the banks of the Peace and Liard rivers at the end of August, and that barley ripens into fine crops about Forts Norman, Wrigley, Simpson and Providence. He says that many regions that now give an uncertain wheat crop, owing to touches of summer frost, would give certain crops were they cleared, as has been the case in other portions of Canada. He has observed with surprise that the leaves of the trees are fully developed in 5 or 6 days, a fact he accounts for by the long duration of light in spring and summer. Mr. Taylor, U.S. Consul at Winnipeg, states that the samples of wheat and barley raised far north of Fort Vermillion are much heavier than the standard weight, and that the English schoolmaster at Fort Simpson raises, among other crops, barley, wheat, pease, potatoes, beans, beets, turnips, etc. Major Butler reports that he saw anemones in profusion flowering on the 26th April on the Yukon within the Arctic circle. The wild hemp and other fibrous plants here are also likely to be of great future importance commercially.

The wealth of these regions in fish is enormous. Dr. Dawson mentions the circumstance that in 1883, the Hudson Bay Co. at their Station on Great Slave Lake caught and used 75,000 whitefish alone, giving 200,000 lbs. of food. On Babine Lake the Hudson Bay Co. use to sell from 4,000,000 to 5,000,000 salmon a year, be-



sides the "dog" salmon. Dr. Bell, director of the Geological Survey, says speckled trout, as well as salmon, abound in all the streams flowing into Hudson Bay. The lakes and streams of this region, which Bishop Clut declares are too numerous to count, and only a small proportion of which are known by name, abound in some or all of the following fish: whitefish, blue fish, carp, speckled salmon, Arctic trout, salmon, dog salmon, perch, pike, "gold eyes," chub and the inconnu, the last named being a fish of great economic value. It is a fish between the white fish and salmon in size and character, and of delicious flavor. Another peculiar fish found in some of the rivers is the Oolachan or candle fish, which is remarkably rich in a palatable oil, which has great value as a remedy for pulmonary diseases, and is now sold in New York, the Hon. Mr. Dewdney informs us, as a substitute for cod liver oil. The fish itself, after being dried, will burn like a candle, so rich it is in oil; and it is largely used by the Indians. All the rivers that flow into the Arctic ocean teem with salmon and Arctic trout, and Dr. Dawson, taking the fact that American whalers who visit Behring sea take out products amounting, according to the census of 1880, to $1,139,000 annually, argues that a like success would attend Canadian whaling expeditions into the Arctic.

While on this subject it should be noted that the testimony of the witnesses examined by the parliamentary committee goes to show that the Great Slave and Great Bear Lakes are much larger bodies than are marked on the general maps in this work. Hon. Wm. Christie estimates Great Slave Lakes to be about 600 miles long, and contains as great an area of water as Lake Superior.

In this region Dr. Bell has traced the northern limits of 30 of our forest trees, and it embraces vast forests of such trees as spruce, tamarac, aspen, rough barked poplar, white birch, balsam, Banksian pine, red willow, etc.

All the country south of a line drawn from the mouth of the Churchhill on Hudson Bay to the mouth of the Mackenzie on the Arctic ocean is more or less wooded.

Of the value of the fur bearing animals, little need be added except the general statement, that owing to the clear dry winter the furs developed in these regions are unexcelled in the world. The birds of this region will also in the future yield valuable products in feathers as well as food, and among these may be named the Canada



goose, the snow goose or wavey, the laughing goose, pigeons, partridges, the swan and various kinds of ducks, including the eider duck, from which the eider down is taken.

Passing now to the mineral kingdom, the difficulty is to limit or define the resources of this vast region. All the expert and lay testimony goes to show that some of its mineral features are of inestimable value, and only wait communication with the world to be developed. Among the minerals named by witnesses are gold, silver, copper, coal, petroleum, plumbago, mica, iron, sulphate of magnesia, ochre, porphory, gypsum, salt, lignite, phosphate, moulding sand, porcelain, clay, alum and bitumen. Witnesses tell of springs of bituminous pitch 10 to 12 feet deep, yielding inexhaustible supplies of bitumen that gives remarkably good material for paving, roofing, etc., the country in which these and petroleum springs are found covering an area of over 100,000 square miles between the Rocky and Laurentian ranges of mountains. At Fort Smith there is "a veritable mountain of pure salt," with rock salt in great quantities below the surface. There are sulphur springs of remarkable strength on the west bank of Great Slave Lake, and between Edmonton and Jasper House are seams of coal, 15 to 20 feet thick. Since these investigations. Surveyor Ogilvie has discovered asbestos in abundance on a small branch of the Peel River.

Mr. E. Petitot, Ptre.,says of the maltha,or mineral tar so extensively found, that it will make a concrete for street paving better than any artificial preparation yet made; and in his report of the various minerals discovered, he mentions the common use by certain Indian tribes of ivory of the finest quality, from animals of ante-diluvian origin. Veins of serpentine rock are also mentioned by him. Dr. Dawson estimates that there is a metalliferous belt of 1,200 to 1,300 miles in length north of British Columbia, which should be as productive as the corresponding belt in that province and the United States.

Considering this wealth of the waters and the mines, the peculiarly favorable combination of climatic conditions already referred to, and the fact that in the northern hemisphere the highest quality of both fruit and grain is always found in the most northern limit of its growth, we feel assured that the vast unsettled regions brought under this cursory investigation form a heritage fit for the greatest of the coming nations of the earth.



POST SCRIPT.

The following extract from the report of the Department of the Interior for 1888 will show that the scattered accounts given of the natural wealth of these northern regions are being confirmed as the official explorations proceed:—

"In last year's report it was explained that Mr. Wm. Ogilvie had been sent in charge of a survey party to explore the Yukon district. Starting from Victoria in spring of 1887, he crossed from Chilkoot Inlet to the head waters of the Yukon, and went down the latter to a point near the international boundary between Alaska and Canada, where he spent the greater part of the winter making astronomical observations for the purpose of ascertaining the position of the 141st degree of longitude, the international boundary at that point. His observations have not yet been completely reduced, but an approximate calculation shows that the boundary is nearly ninety miles below the point where it is marked on the United States maps. This is of great importance, as the line passes through the best gold bearing districts yet discovered in the country.

"In the first days of March, 1888, Mr. Ogilvie left his winter quarters for the mouth of the Mackenzie River, following a route never traveled before by any white man and probably by no Indian. He ascended the Ta-ton-duc, a river flowing from the north into the Yukon; and then crossing a mountain range, he discovered the true sources of the Porcupine River. From this he went to Fort McPherson, crossed the Rocky Mountains to the Mackenzie, by which he turned south, thus accomplishing a journey of 2,500 miles, through a country hitherto very little known.

"The Yukon district appears to have a much greater value than was previously supposed. It would seem that for gold the best paying streams so far as discovered are in Canadian territory. About 300 miners were in the country in the summer of 1887, but it is difficult to say what amount of gold they have taken out, as they are somewhat reticent on the subject. They all agree, however, that $8 per day is poor pay, hardly enought to cover expenses. Taking this as an average, they cannot have made less than $500 each, or $150,000 altogether. Obtained with the crudest and most primitive appliances, this result shows what may be expected so soon as communications with the interior become more easy, and the importation of improved mining machinery possible. Drift coal was found at various places, indicating the existence of seams further up. Salmon abounds in the rivers, but after ascending so far from the sea, it is not fit to become an article of export, although good enough as food for the Indians. The fur trade is confined to a few points; there are immense districts, teaming with game and fur-bearing animals of all kinds, where Indians never go."

Mr. R. G. McConnell, surveying in the same region during 1887, bore out the previous reports as to the plentitude of gold bearing soil and of the reported petroleum deposits said:—

"In the Mackenzie River valley the petroleum-bearing beds were found to have a much wider distribution than expected, and although the distance from a market prevents the utilization of these at present, they will become exceedingly valuable in the future, when the supply of oil from more accessible regions is diminished or exhausted."

enzie Basin



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HUDSON BAY REGION.

The region around Hudson Bay, though long known as a preserve of the Hudson Bay Co., has been explored but little by Canadians or others with a view to opening up its resources, the expeditions organized by the Dominion government in 1884-6 being in fact the first practical effort in this direction. Hudson Bay, which takes its name from Henry Hudson who visited its waters in 1610, is a body of water 825 miles long and 630 in breadth. It extends from latitude 51° to 63° and its outline is not unlike that of the African continent. It has been known that for the past 200 years vessels of the Hudson Bay Co. have regularly navigated these waters with cargoes of furs and supplies, and the question of regular navigation of the Bay was forced upon public attention by the desire of the people of Manitoba and the North West for better and greater facilities for the shipment of their products to the markets of Europe. If the route to Europe out of Hudson Bay could be proved practicable, it would not only open up a new region of local trade, but would shorten the distance between England and the markets of the great west by several hundred miles, as compared with all other transatlantic routes. The following table will illustrate the difference between northern and southern routes across the Atlantic :—

Liverpool	to New York	3,040 miles
"	to Montreal	3,000 "
"	" Churchill (on Hudson Bay)	2,960 "
"	" Winnipeg via New York	4,550 "
"	" " Montreal	4,450 "
"	" " Churchill	3,610 "
"	" Pacific Ocean via New York	5,936 "
"	" " Montreal	5,870 "
"	" " Churchill	4,410 "

In each summer of the years 1884–5–6 an expedition under command of Lieut. Gordon was despatched by the Dominion Government with a small steamer to test the navigability of Hudson Bay for commercial purposes, to make observations as to the flow of currents, movements of the ice, and note matters connected with the climate, geology and resources of the region. Much interesting information was gathered, proving the Hudson Bay region to be possessed of



great natural resources in fish, animals, furs and minerals. The period of successful navigation was officially estimated at three months (15th July to 15th Oct.), but by some members of the expedition at four and a half months. The average date of the consecutive arrivals of 116 of the Hudson Bay Co.'s ships was about 4th Sept. Of the 116 arrivals, 48 were in August, in some cases as early as the 6th and 7th, the latest being 7th Oct. The Hudson Bay agent at Churchill says ice never extends far enough in the bay to intercept a view of the open water, and Hudson Bay itself is navigable early in June, as its waters are warmer than those of the Straits. It is the opinion of many acquainted with the Bay that with the steamers specially constructed with a view to moving through ice floes, these waters are navigable for four or more months in the year.

As to the marine resources of Hudson Bay, it is known that for more than 40 years American whalers have regularly found harvests here. Reports to the U.S. fisheries department show that the returns of fifty whaling voyages there amounted to $1,371,000 or $27,240 per voyage. The value of fish and whale oil alone, taken from Hudson Bay by United States whalers and the Hudson Bay Co., is estimated at $150,000 a year for the past ten years. The Hudson Bay Co. reap over $50,000 a year from the blubber of the porpoise and walrus here, while the Bay teems with salmon, cod, whiting, trout, hake, pollock and other fish. "The salmon abound in the streams running into Hudson Strait so plentifully, that a ship can be loaded with them in a few days. They are pronounced the finest in the world—much better in quality than those in the Pacific or the more southern waters of the Dominion." The same is said of the trout. The hair seals are also very numerous in these waters. The extent and value of the fur bearing animals of these regions is well known. One authority estimates the annual value of the various fox skins alone—silver, cross, blue, red and gray—taken around this region at $380,000. Geese, ducks, ptarmigans, eider ducks, etc., abound everywhere.

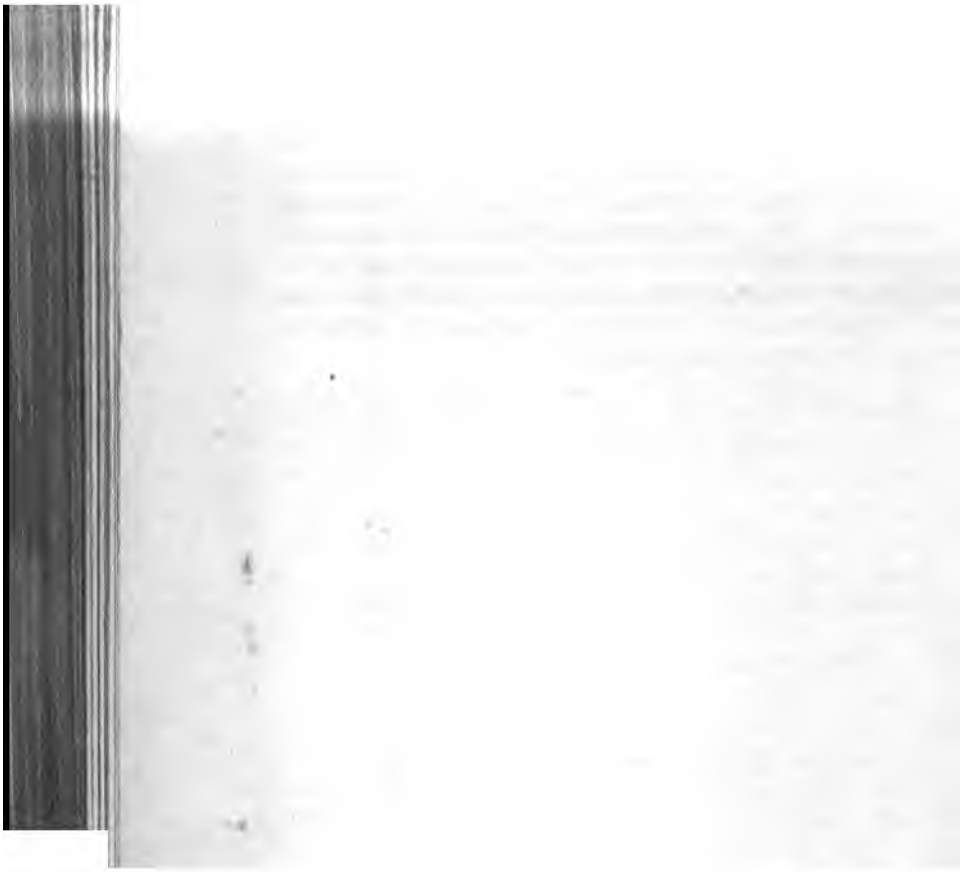
The principal trees of commercial value in these regions are spruce, tamarac, balsam, fir, canoe birch, poplar and similar trees.

Dr. Bell, in his report of 1885, enumerates the following useful minerals, describing the localities where they are to be found :—Iron, clay-ironstone, copper, lead, zinc, molybdenum, silver, gold, gypsum,

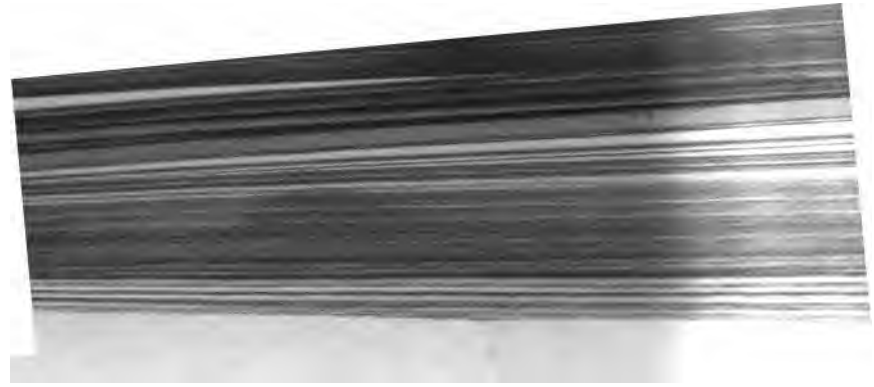


salt, soapstone, lignite, anthracite, petroleum and asphalt, mica, graphite, asbestos, chromic iron, apatite, iron pyrites, lime, hydraulic cement, building stones, glass-sand, fire clays, and clays for brick-making, moulding sand, shell-marl for manure, ochre, peat, flagstones, roofing slates and other substances, as well as various ornamental stones and rare minerals of scientific interest. Judging from the information hitherto obtained and his researches up to 1887, he regards the north-west of Hudson's Bay as one of the most promising in valuable economic materials of the yet unexplored territories.

To develop this region and open up a new route to England, subsidies have been granted by the Federal Government and that of Manitoba for a railway from Winnipeg to the shores of Hudson Bay, and 40 miles of the road have already been completed. A company is also applying to the Ontario government for assistance to build a road connecting Toronto with James Bay the southernmost arm of Hudson Bay, with the object of opening up the mineral and other resources along the line. The country is generally level, and the engineering difficulties of either road are light.









Section IX.

BRITISH COLUMBIA.

If one is moved to enthusiasm in contemplating the great future of other provinces of the Dominion, the mind is struck with wonder in endeavoring to grasp the possibilities that lie before the province on the Pacific. All the great natural features of the other provinces, the level prairies of the Northwest alone excepted, are reproduced here on a magnified scale. In mere geographical extent British Columbia is the largest in the confederation. It has an area of 341,305 miles, or about 357,000, including Vancouver Island, and thus equals the area of France, Italy, Belgium and Holland all put together. It has a greater variety of climate than all the other provinces together, for the upper slopes of the Rockies are as cold as Labrador, while on the southern coast oranges were last year ripened in the open air. Its wonderful coast line; its unrivaled fisheries; its stupendous forests, many trees of which measure 8 to 10 feet in diameter; its incalculable wealth in those minerals which are the most valued and most necessary to man; and its peculiar geographical position on the Pacific Ocean all mark out the province of British Columbia as one of the imperial realms of the future.

DISCOVERY AND SETTLEMENT.

In the year 1792—by a coincidence just 300 years after the discovery of America by Columbus,—the ship Columbia of Boston, commanded by Capt. Gray, sailed into the mouth of the noble river upon which he bestowed the name of his vessel, and which afterwards gave the name to the province of British Columbia, where its head stream lies, and through which it runs for a course of 440 miles. Long before this it had been known to the Spanish navigators who called it the St. Roe, but it was not till 1811 that its main course was navigated by the astronomer of the North-west Fur Trading Company. In the year that Capt. Gray saw the mouth of the Columbia, a hardy Scotchman named Simon Fraser joined his fortunes to the North West Co., and in 1805-7 was sent on the first expedition across the Canadian Rockies, to explore the country beyond and open up trade with the Indians. He discovered the river which took his name, and having established trading posts, assumed sovereignty of the country in the name of his company, under whose control it remained till its fusion with



the Hudson Bay Co. in 1821. It was also in 1792 that Capt. Vancouver of the Royal Navy sailed up the Pacific, and gave his name to Vancouver Island which he discovered, and which proved to be the largest on the west coast of America. Although discovered so long ago, it was not till 1843 that a permanent settlement was made on Vancouver Island by the Hudson Bay Co., who in that year built a fort and trading post on the spot where the beautiful city of Victoria now stands. Six years later this settlement developed into the colony of Vancouver. The mainland of British Columbia remained a wilderness with two or three fur trading posts till in 1858, some gold prospectors advanced up the coast and discovered the rich diggings of the Fraser River. The influx of people was so great that the region was erected into a crown colony in the same year, under the name of British Columbia. In 1866 the two colonies were united, and in 1871 the province joined the Confederation of Canada. In that year the population of the Province was only 36,247 inciuding the Indians. Now it is about 100,000, and is rapidly increasing as the varied and exhaustless resources of the country are becoming known to the world. The increase by immigration alone in 1888 was estimated at 11,000.

GEOGRAPHICAL POSITION.

British Columbia is nearly a parallelogram in shape, being about 760 miles long north and south, and about 500 broad. For about 300 miles down the coast from the north, a very narrow strip of the United States Territory of Alaska intervenes between it and the sea; but even with this strip cut off it has a coast line, reckoning its wonderful labyrinth of bays and inlets, of perhaps 2,000 miles. It is noteworthy that while from San Francisco to Cape Flattery on the American coast there is not a single harbor for ocean ships, good harbors can be found by the dozen in British Columbia, both on the mainland and Vancouver Island. The scenery of the coast is unlike that of any shore yet discovered, and was thus graphically pictured by Lord Dufferin when he visited it in 1876:

"Such a spectacle as its coast line presents is not to be paralleled by any country in the world. Day after day for a whole week, in a vessel of nearly 2,000 tons, we threaded an interminable labyrinth of watery lanes and reaches that wound endlessly in and out of a network of islands, promontories, and peninsulas, for thousands of miles, unruffled by the slightest swell from the adjoining ocean, and presenting at every turn an ever-shifting combination of rock, verdure, forest, glacier and snow-capped mountain of unrivaled grandeur and beauty. When it is re-



membered that this wonderful system of navigation, equally well adapted to the largest line of battle-ship and the frailest canoe, fringes the entire seaboard of your province, and communicates at points, sometimes more than a hundred miles from the coast, with a multitude of valleys stretching eastward into the interior, while at the same time it is furnished with innumerable harbors on either hand, one is lost in admiration at the facilities for inter-communication which are thus provided for the future inhabitants of this wonderful region."

These wonderful natural features of the coast lead one to consider the advantages of British Columbia's position with reference to the ocean traffic of the future. It juts out from North-West America as Great Britain juts out from Europe. The comparatively favorable distances across the ocean to Japan, China, and Australia, the direction of the trade winds, the open harbors, the stores of coal, the immense fertile region through which the Canadian Pacific Railway reaches the seaboard of British Columbia—linking the Pacific Ocean to the system of the St. Lawrence navigation on the eastern side of the American Continent—are facts extremely favorable to the growth of a widely extended commerce. The opening of the Panama Canal, also, would have a marked influence, commercially, on the future of the North West of America.

The distance from Japan, China or the Pacific Coast generally to Liverpool is from 1,000 to 1,200 miles less by the Canadian route than by the American railways. In reference to this point, Professor Maury, an American, writes:—

"The trade-winds place Vancouver Island on the wayside of the road from "China and Japan to San Francisco so completely, that a trading vessel under "canvas to the latter place would take the same route as if she was bound for "Vancouver Island—so that all return cargoes would naturally come there in "order to save two or three weeks, besides risks and expenses."

It must, however, be clearly understood that this advantage, equivalent to the distance between Vancouver Island and San Francisco, viz., about 700 miles, is independent of and in addition to, the saving of direct distances by the Canadian route given above.

These very important facts of position in relation to distances are very much heightened by the further fact of the possession of important stores of Coal on the Canadian Pacific Coast, and the plains east of the Rocky Mountians. This is put in a striking manner by Sir Charles Dilke, in his book entitled "Greater Britain." Sir Charles says:—

"The position of the various stores of coal in the Pacific is of extreme importance as an index to the future distribution of power in that portion of the world;



but it is not enough to know where coal is to be found, without looking also to the quantity, quality, cheapness of labor, and facility of transport. In China and in Borneo there are extensive coal fields, but they lie 'the wrong way' for trade; on the other hand, the California and Monte Diablo, San Diego and Monterey coal lies well, but is of bad quality. Tasmania has good coal, but in no great quantity, and the beds nearest the coast are formed of inferior anthracite. The three countries of the Pacific, which must, for a time at least, rise to manufacturing greatness, are Japan, Vancouver Island and New South Wales; but which of these will become wealthiest and most powerful depends mainly on the amount of coal which they respectively possess, so situated as to be cheaply raised. The dearness of labor under which Vancouver suffers will be removed by the opening of the Pacific Railroad; but for the present New South Wales has the cheapest labor, and upon her shores at Newcastle are abundant stores of coal of good quality for manufacturing purposes, although for sea use it burns 'dirtily' and too fast. * * * The future of the Pacific shores is inevitably brilliant, but it is not New Zealand, the centre of the water hemisphere, which will occupy the position that England has taken on the Atlantic, but some country such as Japan or Vancouver jutting out into the ocean from Asia or from America, as England juts out from Europe."

The question of pre-eminence in the future ocean trade would seem to be settled by the coal deposits. These are inexhaustible in this province, and as to quality Dr. Dawson reports that at a test made by officers of the American Government to ascertain the sources of the best coal on the Pacific coast, it was found that to produce a given power in steam, 1,800 lbs. of Nanaimo or Wellington (B.C.) coal were equal to 2,400 lbs. of Seattle (U.S.), to 2,600 lbs. Oregon coal, and to the same of California coal. This is corroborated also by the preference given to it by steamship owners, and by the fact that nearly two-thirds of the coal received at San Francisco by sea comes from Vancouver Island. Indeed indications of this future greatness in maritime trade are already apparent. In 1886 the exports of B. C. amounted to about $3,000,000, or four times those of Manitoba, and nearly three times those of Ontario per head of population. They consisted of gold, coal, salmon and other fish, timber, furs, etc., and reached the markets of Great Britain, the United States, Mexico, South American States, Japan, Australia and Africa. The opening of the direct line of steamships to China and Japan has since increased this foreign trade, and is a further justification for anticipating a great future maritime traffic.

CLIMATE AND GEOGRAPHY.

Regarding the climate we quote the following from a description appearing in *West Shore*, published at Portland, Oregon :—



The general surface of the country is mountainous and broken, consisting of short ranges, detached groups of mountains, elevated plateaus, and many valleys of various extent. Running parallel with the Rocky Mountains, and in many places scarcely distinguishable from them are masses of mountains, and along the coast lies a high range usually indicated as a continuation of the Cascades, but in fact a northern extension of the great Coast Range. Lying between these two, and extending as far north as latitude 55.30 degrees, is an irregular belt of elevated plateau. Beyond this the interior mountains decrease in height, and the land has a gentle slope toward the Arctic Ocean. Peace River and other streams of the Arctic watershed find their sources there. Down the centre of the plateau flows the Fraser River, its general course being south until almost to the international line, where it turns sharply to the west and enters the ocean. The other great streams of the interior are Thompson River, entering the Fraser from the east, and the Okanagan, Columbia and Kootenay, the last two having very eccentric courses. The Columbia rises almost in the extreme southeastern corner, sweeps northerly around the upper end of the Selkirk Range, and then flows directly south between the Selkirk and Gold mountains into the United States. The Kootenay has its source in the same region, makes a long sweep to the south, crossing the boundary line, and returning again, discharges its waters into the former stream. Lakes and water courses abound from one end of the province to the other, many of them navigable by steamers of light draft for great distances.

Taken as a whole, the climate is much more moderate and equable than that of any other portion of the Dominion, each district enjoying cooler summers and milder winters than any region of a corresponding latitude lying east of the Rocky Mountains. Primarily the one great cause of this prevailing characteristic is the great ocean stream of warm water known as the "Japan Current." This great volume of comparatively warm water flows south along the coast of British Columbia. Perpetual summer reigns wherever the full influence of this great ocean river is felt. Even in the midst of winter the warm breezes from the sea steal over the islands and mainland, and penetrate far into the interior among the many valleys of the mountains, their modifying influence gradually lessening as they advance. In the regions fully subject to them flowers bloom, vegetation remains green and bright, and there is little save the almanac and increased rainfall to tell that winter is at hand. The warm, moisture-laden currents of air coming from the southwest meet the colder atmosphere from the north, and the result is frequent and copious rains during the winter season, the rainfall being much more abundant on the mainland coast than on the islands or in the interior.

The climate of the southeastern portion of Vancouver Island, the region in which Victoria is situated, is universally conceded to be the most delightful on the Pacific Coast. Here much less rain falls than on the adjacent mainland or upon the island further north, or the numerous small ones and the large ones of the Queen Charlotte group still further to the northward. Much of the moisture is taken from the atmosphere by the mountains lying between Victoria and the ocean, and the second precipitation does not occur until the winds strike the high lands of the opposite coast. Snow seldom falls, and then lies but a short time. The climate at that point is truly delightful, and is at all times invigorating. For a



period of three years the lowest temperature was 8 deg. and the highest 83.9, the annual mean being 55.6. During the same period the average fall of rain was 24.78 inches per year.

The climate of the mainland coast opposite Vancouver Island differs somewhat from that just described. In the summer the temperature averages slightly higher and in winter somewhat lower, while the rainfall is greater immediately along the coast, decreasing toward the interior. The Lower Fraser Valley (New Westminster District) does not receive in summer the cold breezes from the Olympian Mountains which blow across Victoria, nor does it receive in winter so much of the genial warmth of the warm ocean air. As a general thing ice forms on the river for a short time, and snow begins to fall in January and continues to do so intermittently till March, the ground not being continuously covered with it. The rainfall at New Westminster is somewhat greater than on the flats at the mouth of Fraser River. It is also less as the river is ascended until Hope is reached, where it is about the same as at New Westminster. These variations are due solely to local causes. Above Yale it decreases rapidly as the interior is penetrated. Observations for seven consecutive years at New Westminster showed the lowest temperature to be 7 deg. and the highest 92, with an annual mean of 47.9. The average yearly rainfall was 59.66 inches, including a precipitation of snow of 51.2 inches, equal to 4.27 inches of rain.

The climate of the interior, that portion of the province lying above and to the east of Yale, is radically different from that of the coast, being drier and subject to greater extremes of temperature, though not entirely beyond the soft influences of the Japan Current. The mountains along the coast relieve the ocean winds of their moisture, and the elevated plains of the interior are in consequence much drier than the coast and islands. The annual mean temperature does not differ much from that of the coast region, but the summer and winter extremes are much greater, and there is also much variation in different districts, owing to situation and local causes. The total precipitation of rain and snow is very small. Wherever there occurs a mountain barrier, there the fall of rain and snow is heavier at its western base and correspondingly light on the lee side. In the Gold and Selkirk ranges, in the southeastern portion of the province, the winters are more severe and snowfall heavier than in the lower and more open portions. In that part which may be classed as the "Southern Interior," the climate, as a whole, is milder than the northern districts. In summer the heat is sometimes very great, though sunstrokes are unknown, and the evenings and nights are rendered comfortable by cool mountain breezes. Winter weather continues about four months, the remainder of the year being quite agreeable and enjoyable. Snow seldom exceeds two and one-half feet in depth, and occasionally, in some localities, stock remain out the entire season, though the prudent farmer keeps a good supply of food for their use when necessary. The climate changes materially to the northward of the region just considered. The general surface of the country has a greater elevation, and the Cariboo and other mountain masses render it quite broken and rugged. The summers are quite warm but of shorter duration; winter continues longer and the fall of snow is heavier. The forests are denser and the trees of a larger growth. In the valley of the Fraser, within this district, the climate is

milder than that of the surrounding higher altitudes, and the atmosphere is drier, the valley and the benches and rolling hills and valleys of the western tributaries being covered with bunch grass.

SCENERY.

It may be imagined from what has already been said that the scenery of British Columbia is on a scale of vastness and grandeur unsurpassed in America. The views which are presented to the railway traveler through the magnificent passes of the Rockies, the Selkirks, the Gold Range and the Cascades are spoken of with admiration, but hunters and explorers tell us that these are but scenes in the entry of a theatre of stupendous views of nature in her sublimest aspects, many regions being yet unscanned by the eyes of a white man. Speaking of the scenery in the railway passes, a writer in a London journal says:—

"The convulsion of nature which piled up these gigantic masses of rock in distant ages has left gaps with almost vertical walls, through which the railway enters on its passage through the mountains. Before the surveyors penetrated these regions they were practically untrodden by man; and the trains now travel along precipices where, in bygone days, only the eagle could obtain a footing. There is no finer scenery in the world than among these mountains. During a journey through them the effect produced by their many beauties is almost bewildering, and an impression is left on the imagination which is not easily forgotten."

Some of these mountains rise in pyramids 10,000 to 12,000 feet high; some have upon their huge backs single glaciers believed to be as large as all the glaciers of Switzerland combined; some present cliffs rising precipitously, for thousands of feet, and forming walls that stretch for miles before the eye. One such canyon along the Fraser extends for twenty miles. The bright green of the mountain valleys, the great forest trees on the mountain slopes, the deep torrential rivers fed from many a secluded mountain lake and stream, whose clear waters are covered at times with wild fowl and teem with edible fish are subjects that must be left to the artist, poet or sportsman of the future. One quotation may be given from the Marquis of Lorne's charming description of the coast scenery:—

"Along the shore of these oceans inlets grow wondrous specimens of the Douglas fir and gigantic cypress, to the height of 150 and 250 feet, and of a girth of 25 and 30 feet. These stand close to the water's edge, and it is on the borders of such sheltered coast that the tallest trees are found. Inland there are magnificent groves of the same species, clothing the valleys of the Columbia River, but the finest are to be seen near the sea, and it is to be earnestly desired that they may be preserved in some area chosen as a national park, that travelers may have the attraction of

visiting the tremendous aisles where the great shafts rise from the thickets of glossy-leaved shrubs, to be lost to sight in the dark green gloom above. I do not think there is any scenery more solemn and beautiful than the interior of such a grove. It wants, of course, the intense color and the sunlit glory of the liana-hung woods of the South, and the undergrowth is not so varied or bright. But the russets and browns, the greys and sombre greens, the purple tints on the straight stems varied by the vivid hues of the moss, which provides a compass for the wanderer, because it grows most abundantly on the side which feels the western sea moisture,—all are most delicious to the eye. And overhanging the sea margin, in crannies of the rocky bays or covering the jutting promontories, are the beautiful madrona-trees, the large-leaved arbutus, with the trunks as red as coral. All this forest is evergreen. Winter strips the scattered maples of their autumnal fire, but makes little change on the steep slopes of these deep lochs."

MINERALS.

The experience of miners and the data collected during the last ten years by the geological officers of the Dominion government establish the existence of vast mineral wealth in British Columbia; and when the country is opened up and the cost of labor and supplies lessened, the variety and amount of its products will not be excelled by any part of the two Americas. The mineral products now known and mined are gold, coal, silver, iron, copper, galena, mercury, cinnibar, platinum, antimony, bismuth, molybdenum, plumbago, salt, and mica, while other minerals are being discovered from time to time as new regions are explored. So high an authority as Dr. Dawson says that as yet "British Columbia can scarcely be said to have more than begun the development of its mining industries."

Of the gold bearing rocks here, the same authority says: "There is little reason to doubt that they are geologically equivalent to the gold bearing rocks of California." He proceeds to say:—

"Gold is known to be almost universally distributed in the Province of British Columbia. There is scarcely a stream of any size in any part of the Province that one cannot wash a few 'colors,' out of, at the very least; and in 105 localities, which I catalogued in 1877, actual mining had been carried on for gold. The main auriferous belt of British Columbia runs from south-east to north-west, just inside the Rocky Mountain, and includes the mining localities which have been called Kootenay, Big Bend, Cariboo, Omenica and Cassiar. From south to north, from 1858 to 1882, the gold produced in British Columbia amounted to $46,685,334, which is a great return, considering that the average population of the Province, taking the period altogether, would not exceed about 10,000 whites. The average number of miners employed in these placer diggings has been 2,940, and the average yield per man employed, obtained by dividing the

to talby the number of miners, $683 per man per annum. It should be also considered that these placer deposits are, as a rule, only to be worked in summer, and that the sum stated was earned in less than half the year of actual work. The greatest yield of any one year was in 1864, when $3,735,850 was sent out of the country. Last year the total yield was only $1,013,827. Since 1864, with occasional fluctuations, the yield of gold has shown a general tendency to decline, and the state of the country at present is simply this: The richer placer mines so far discovered having been more or less worked out, the gold yield is falling off. Such placers have been more or less completely exhausted, early in the history of gold-mining countries, as in Australia and California. Then the period comes when the miner goes to work on the quartz lodes, whence the gold in the placer mines has been derived. That period has not arrived yet in British Columbia. There is not a single auriferous quartz vein worked there yet, and the present is the interim period between the full development of placer mines and the beginning of the quartz mining, which is a more permanent industry."

Considerable belts of auriferous rocks have been found also in Vancouver Island, and in Queen Charlotte Island. During the past year many new placer diggings have been found, and fresh Canadian and American capital is now being invested to bring in machinery and develop the rich quartz ledges.

We have already shown the superiority of the coal of this province; and the widely spread and inexhaustible beds are being developed so steadily that it may soon rank first in the mining industries. In twelve years preceding 1874 the total exports of coal were only 150,000 tons or 12,500 tons per annum. In that year 81,000 were exported, and in 1884 the output had grown to 394,070 tons, of which 245,478 tons were exported. The exports in 1888 were 400,000 valued at $2,400,000. At Nanaimo, in Vancouver Island, the industry has reached its greatest proportions. The quality and kind varies in different localities from common lignite to anthracite, of which beds extend from 20 to 100 miles. Most of the coal found is admirably suited for steam purposes, and the steam shipping trade of the Pacific now turns to British Columbia for its supplies. The total output of the Nanaimo mines in 1888, including exports and home consumption, was 487,784 tons.

On Texada Island, only 20 miles from the Comox coal fields, and near the mines of Nanaimo and Wellington are vast masses of rich magnetic iron, which assays 68.4 of pure iron with little sulphur and impurities. Gold and silver bearing quartz leads have recently been discovered on this island, which are likely to become of great value.

On the American border are to be found large quantities of hematite, and the existence of these three minerals in such a combination and in such quantities points to the development of an iron industry whose dimensions no man can gauge. One of its features in the future may naturally be the iron ship building industry. As a beginning of the iron industry, smelting works are now being erected at Vancouver.

Silver has been found, near Hope, on the Fraser River. The specimens of ore assayed have given high yields of silver. It has also been found at Yale, on the Fraser, and a rich silver ore has been brought from Cherry Creek, a tributary of the Shuswap. Native silver has been found at Omenica, in the northern interior, and argentiferous galenas at Omenica and Kootenay. Professor Selwyn states that there is every reason to believe that rich mines of silver will be opened in the province. Specimens received by the Geological Survey, from the Rocky Mountains, show a high percentage.

Copper has been discovered in a great many localities, both inland and on the coast. Seventeen are mentioned in the Geological Survey report. The Howe Sound mine is considered by Dr. Dawson as the most promising.

Galena has been found in many parts of the Province in connection with gold, and Cinnabar has been obtained in the gold washings on Fraser river and the Hope silver ores. Rich Cinnabar ore was found on the Homathco in small quantities.

Mercury and Platinum have also been found, but as yet in small quantities.

Specimens of Antimony and of Bismuth have been found at Shuswap Lake; of Molybdenum near Howe's Sound and on the upper part of the Cowitchan River, and of Plumbago in Vancouver Island.

Salt Springs are found on Admiral Island, Shoal Bay, Vancouver, and salt is also found on the Chilcotin and Mazco Rivers, but little is known of these or their capabilities for use.

The land and mining regulations are referred to later on.

THE FISHERIES.

The fisheries, like the minerals, have yet to be developed. The salmon of the British Columbia rivers are now known throughout the world, it is true; but the value of the deep sea fisheries of this



coast is scarcely yet understood by even the British Columbians themselves. The principal fish are salmon, cod (each of these two having several species), shad, whitefish, bass, flounder, skate, sole, halibut, sturgeon, oolachan, herring, trout, haddock, smelts, anchovies, dogfish, pike, perch, sardines, oysters, crayfish, shrimps, crabs and mussels. The whale, seal and sea otter fisheries are also important branches of the province's marine products. Although the rivers, lakes, and sea coasts teem with these fish, many of the species mentioned have not yet either entered into the local markets or figured among the exports, for want of men and capital to open up the trade. The subject, however, has begun to attract the attention of the fishermen of the Atlantic coasts and of Europe, and within the next few years the work of distributing these vast living stores of food over the world will begin. The fishery products of the province are already remarkable, considering the small population yet engaged in the trade. The exports of fish and fish products from Victoria alone, in the year ending June, 1888, were $1,159,504 in value, and the total yield including the consumption by Indians is over $5,000,000, the official estimates in 1886 being $4,834,848.

The salmon of British Columbia are famous. At the proper seasons some of the rivers are so full of them that the local saying, "you can walk across the river upon their backs," seems scarcely a hyperbole. There are 21 factories for making canned salmon, 12 of them being on the Fraser, and their annual output is from 150,000 to 200,000 cases (each containing forty-eight 1 lb. tins), with 4000 to 5000 barrels of salt salmon. The take of salmon from the Fraser alone is over 8,000,000 lbs., exclusive of what the Indians procure. Fresh salmon, as well as tinned salmon, are now being shipped frozen to the markets of eastern America and England.

A remarkable British Columbia fish is the oolachan or candle fish. It is smaller than a herring, and so oily that when dried it will burn like a candle. They are caught chiefly in the Nass and Fraser rivers. They enter the Fraser about the first of May. They are delicious when fresh, smoked or salted, and their oil is considered superior to cod liver oil or any other fish oil known. It is of a whitish tint, and about the consistency of thin lard, and is a staple food among the natives, and an article of barter between the Indians of the coast and the interior tribes. These fish begin running in the Nass about the last of March, and enter the stream by the million for several weeks. The various Indian tribes of that region assem-



ble on its banks, and catch them in immense numbers. The fish are taken in purse nets, frequently a canoe load at a single haul, and are piled in bins on the shore. They are then placed in bins made of plank, and having sheet iron bottoms, holding from three to five barrels, and are boiled in water about four hours. The concoction is then strained through baskets, made from willow roots, and the oil is run into red cedar boxes of about fifteen gallons capacity each. When the run of fish is good, each tribe will put up about twenty boxes of oil. Before the introduction of sheet iron bottoms for their tanks, the Indians boiled the fish by throwing heated stones into the tank. There is no doubt that this undeniably valuable article will soon become one of the regular products of the province, for exportation in quantity, as it is even now, to a limited extent. *

Another fish destined to be of great commercial value is the Skil or black cod, which is caught in 150 to 300 fathoms of water, and at some distance from the shore. It is pronounced to be superior to the true cod, both in quality of meat and value of oil, and is found between Vancouver and Queen Charlotte Islands in countless numbers. Two schooner loads brought down in 1888 have been so favorably reported on, that large preparations are being made to prosecute the industry.

Want of space forbids a detailed account of the industry, but all the different kinds of fish before enumerated promise profitable employment to capital. Several of these fish are remarkably rich in oil, the dogfish among others yielding a valuable lubricating oil which is now being manufactured for export, the product in 1887 being 67,000 gallons.

The British Columbia oysters, though small, are of very fine flavor, as are also the shrimps.

The sealing industry is already extensive, and will be more so when an amicable arrangement is come to between the governments of Great Britain and the States, regarding fishing rights in the northern waters, as affected by the monopolistic claims of the Alaska Commercial Company. The catch of seals by British Columbia sealers in 1887 was 33,800 valued at $236,600, that of 1888 being, owing to adverse weather, only 24,790, valued at $173,530.

FORESTS.

The immense forest wealth of the province is now beginning to be

* West Shore, June, 1887.



opened up by the establishment of saw mills and wood working factories. In 1881, the exports of timber were valued at $162,747, in 1888 the exports of lumber were valued at $527,371, and the total quantity of timber cut about 140,000,000 ft. This was an increase of 40,000,000 ft. over 1887, and shipments were made to Asia, Australia, Africa and South America. The principal trees consist of the Douglas fir, spruce, white pine, hemlock, maple, oak, cedar, tamarac, poplar, ash, cherry, yew, arbutus, dogwood, and others, some of the foregoing having several varieties.

Among these trees, one of the most celebrated is the Douglas fir or pine. It frequently grows over 300 feet high, with a diameter of 8 to 9 feet. It is admirably suited for ship building, as well as for general purposes, owing to its strength and straightness. Masts have been cut 130 feet long and 42 inches in diameter, hewn octagonally. It is often obtained 150 feet free from knots, and has squared forty-five inches for a length of 90 ft. It is thought to be the strongest pine, or fir, in existence. Broken in a gale, the stem is splintered to a height of at least twenty feet, and it is astonishing to see how small a portion of the trunk will withstand the leverage of the whole tree. The timber contains a great deal of rosin, and is exceedingly durable. The grain is coarse, but exceedingly tough and tenacious. It will bear more weight than oak. A piece one foot long and one inch square, supported at the ends, requires a weight of six hundred and thirty-eight pounds to break it; oak requiring but five hundred and fifty, and maple five hundred and eighty. Its mean crushing load, endwise, is seven thousand pounds to the square inch, and sidewise, seventeen hundred and fifty pounds. The bark resembles cork, and is often eight or nine inches thick.

Cedars sometimes attain a diameter of 17 feet, and it is of this tree that the Indians make their celebrated canoes. Dr. Dawson attributes the great size of the British Columbia trees to the mildness and humidity of the climate. There are 30 species of trees of greater or less commercial value. In tracts already explored, a Michigan lumberman, who recently visited the province, estimates that there are 40,000,000,000 to 50,000,000,000 feet of choice timber.

AGRICULTURAL AND HORTICULTURAL.

The Province of British Columbia cannot be called an agricultural country throughout its whole extent. But it possesses very great agricultural resources, especially in view of its mineral and other

sources of wealth, as well as its position. It possesses tracts of arable land of very great extent. A portion of these, however, requires artificial irrigation. This is easily obtained, and not expensive, and lands so irrigated are of very great fertility. The tracts of land suitable for grazing purposes are of almost endless extent, and the climate very favorable, shelter being only required for sheep, and even this not in ordinary seasons. On the Cariboo road there is a plain 150 miles long, and 60 or 80 wide, and between the Thompson and Fraser rivers there is an immense tract of arable and grazing land. The hills and plains are covered with bunch grass, on which the cattle and horses live all winter, and its nutritive qualities are said to exceed the celebrated blue grass and clover of Virginia. Between 5,000 and 6,000 square miles of the Peace river prairie land is within this province. The wheat shown here often yields 30 to 40 bushels per acre.

Besides the mainland there are on Vancouver Island about 1,000,000 acres of land well suited to agriculture, and on Queen Charlotte Islands about 100,000 acres, most of this being now covered with dense forests. The total agricultural land of the province cannot yet be even approximately estimated. British Columbia produces all the fruits of the temperate zone, in fine quality and size. The industry is only in its infancy, but A. McD. Allan, president of the Ontario Fruit Growers Association, visiting the province in 1888, predicted a great future in this branch. At a local fair at Chilliwhack, in this year, 75 varieties of fruit were shown, most of them being pronounced equal to the California products. Among various kinds of vegetables shown was a squash weighing 100 lbs., and a pumpkin weighing 157 lbs.

COMMUNICATIONS.

On every hand the visitor to this province is struck with evidences that only men, railways and working capital are wanted to open up the vast treasures of nature lying stored within its limits. The era of local railway building has now begun. Among these enterprises, one of the most important is the Westminster Southern, which, it is expected, will be built this year, and which will connect Westminster with the cities of Puget Sound, and with the American Pacific coast system, thus completing the connection from Canada to Mexico. It will be 126 miles long from the Fraser to Seattle, W.T. Final surveys have been made on a railway through the Shuswap and Oka-



nagan regions, 52 miles in length, with a connecting link on the lakes. The line enters splendid agricultural and mining districts, and is designed to reach to the Kootenay. Another proposed railway of great importance to the province is one opening up the great plateau between the Cascade and Selkirk Mountains. Still another is intended to connect Victoria with the mainland by means of a ferry. Work has been commenced on the Kootenay canal, which is to connect the upper Kootenay river with the headwaters of the Columbia river by Lake Columbia. It will afford steamer communication for a stretch of 200 miles, and give access to one of the richest mineral districts of the province.

GENERAL INFORMATION.

Crown lands here are classed as surveyed or unsurveyed lands, and may be acquired by "record" and pre-emption or by purchase. A British subject over 18 years may record unsurveyed and unoccupied crown lands and aliens may do so on declaring their intention to become British subjects. The quantity of land may not exceed 320 acres in the district north and east of the Cascade or coast mountains, or 160 acres in the rest of the province; and only one such claim can be held at a time. The fee on recording is $2. Crown grants in fee simple may be obtained after improvements.

The price of Crown lands pre-empted is $1 per acre, which may be paid in four equal instalments. The Crown grant excludes gold and silver ore, and reserves to the Crown a royalty of 5 cts. per ton on every ton of merchantable coal raised or gotten from the land, not including dross or fine slack. It also reserves to the Crown, since the 7th April, 1887, all timber on the land, except for domestic purposes. A pre-emptor, however, can obtain a license to cut the timber of his pre-emption on payment of dues at the rate of 25 cts. per 1,000 feet board measurement. No Crown grant can be issued to an alien who may have recorded or pre-empted by virtue of his declaring his intention to become a British subject, unless he has become naturalized. The heirs or devisees of the homestead settler are, if resident in the province, entitled to the Crown grant, on his decease.

Vacant surveyed lands, which are not the sites of towns or the suburbs thereof, and not Indian settlements, may be purchased at the rate of $2.50 per acre, and lands so purchased must be paid for at the time of purchase.

The applicant to purchase unsurveyed Crown lands, after staking, posting, &c., must give two months' notice of his intended application in the Government Gazette, or a newspaper of the district.

He must also have the land surveyed at his own expense, by an approved surveyor.

The price is $2.50 per acre, to be paid as follows:—10 per cent. at the time of application, and 90 per cent. on completion and acceptance of survey. The quantity of land must be not less than 160 acres, nor more than 640 acres in any one district. The purchase must be completed within six months from application. No public lands of any kind that are chiefly valuable for timber are sold either by public auction or by private sale.

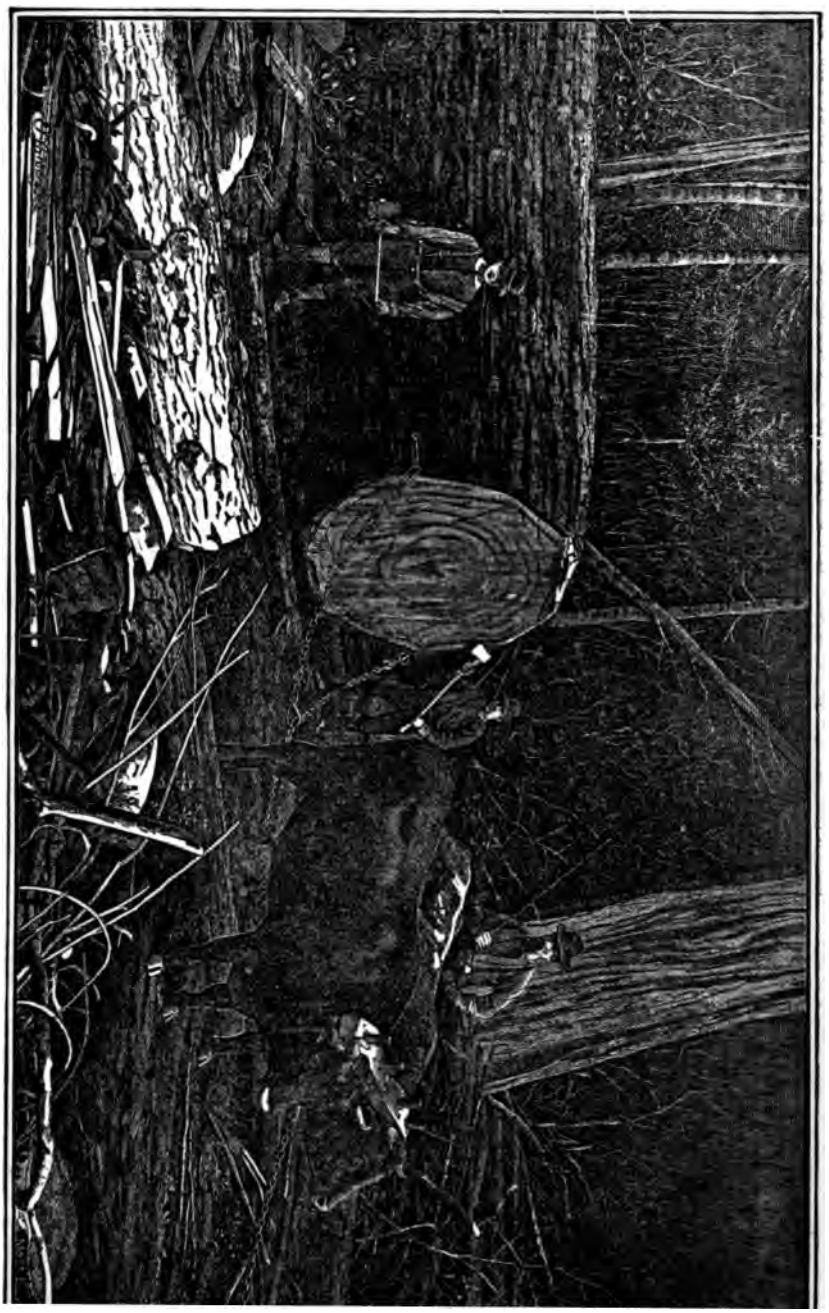
The farm and buildings, when registered as a homestead, cannot be taken for debt incurred after the registration; they are free from seizure up to a value not greater than $2,500 (£500); goods and chattels are also free up to $500 (£100); cattle "farmed on shares" are also protected by an Exemption Act.

The following are chief points in the mining regulations:

"Free miners" only can have right or interest in mining claims or ditches. A "free miner" must be over 16 years of age. His certificate may be for one year ($5), or three years ($15), and is not transferable. He may enter and mine Crown lands, or, on making compensation, lands occupied for other than mining purposes. To recover wages, must have free miner's certificate.

Claims must be recorded ($2.50), and re-recorded ($2.50). Time allowed for record is three days after location, if within 10 miles of office—one additional day for every additional 10 miles, or fraction thereof. In very remote places, miners assembled in meeting may make valid rules temporarily. Transfers of claims or mining interests must be in writing and registered.

A free miner can only hold two claims by pre-emption, but may purchase any number. Claims must be, as far as possible, rectangular, and must be staked. The sizes are:—"Bar diggings," 100 feet wide at high water mark, extending into the river to the lowest water level. "Dry diggings," 100 feet square. "Creek Claims," 100 feet long in general direction of stream and in width from base to base of the hill or bench each side. But if the hills or benches are not 100 feet apart, then the claim shall be 100 feet square. "Bench Claims," 100 feet square. "Mineral Claims," containing or supposed to contain minerals (other than coal) in lodes or veins, 1,500



BRITISH COLUMBIA FOREST SCENE.

feet long by 600 feet wide. Discoverers of new mines allowed 300 feet long for each discoverer. "Creek discovery claims," 1,000 each side of the centre, or as far as the summit.

A twelve months' prospecting license for 480 acres of vacant coal land, in one block, may be granted by the Government on payment of $25. The licenses may be extended for another year, if the licensee has actually explored for coal, on payment of $50. The license is not transferable without notice being given to the Chief Commissioner of Lands and Works. If a licensee wishes to purchase the coal lands, he may do so under the said Land Act at $2.50 per acre.

The following are features of the Public School system:

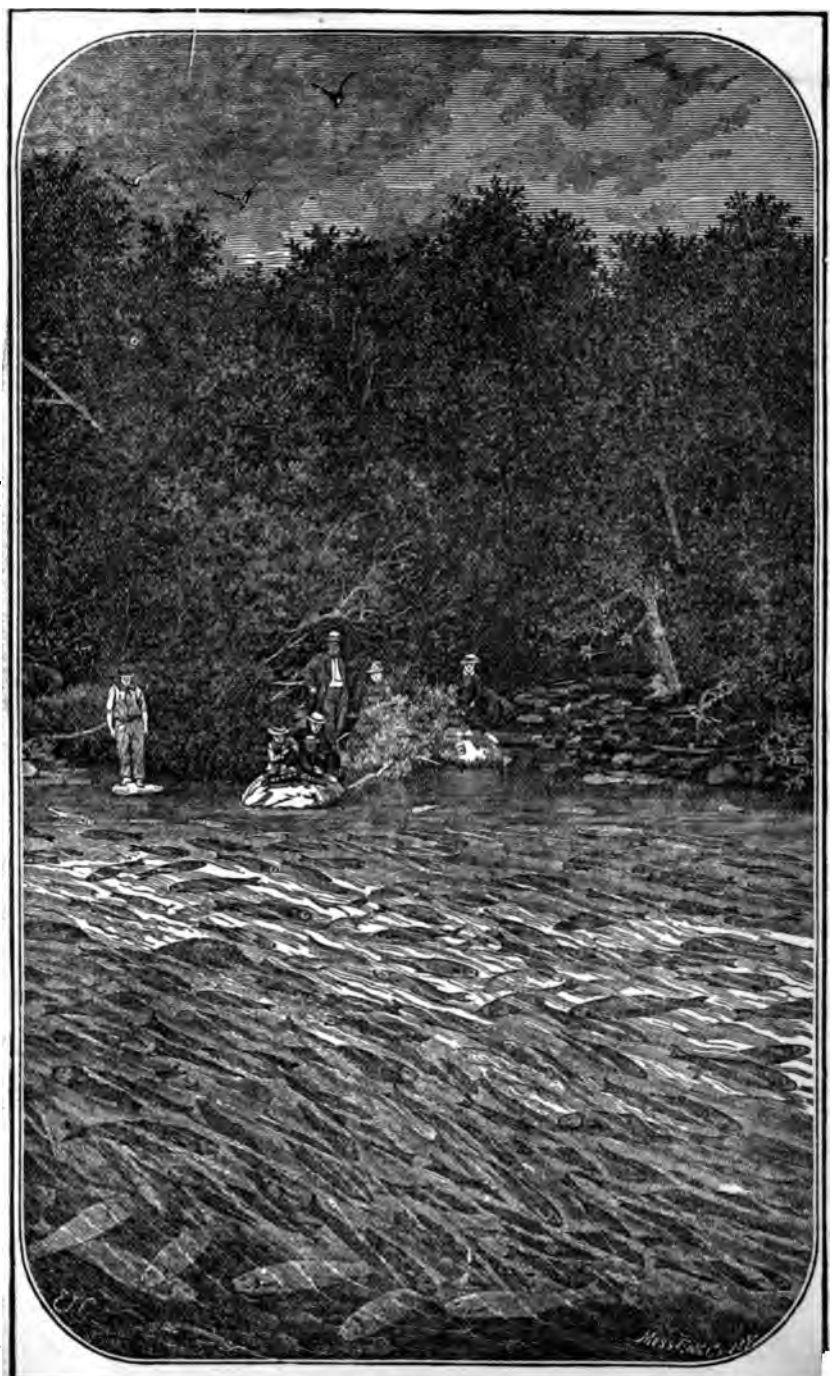
The Public Schools are in the hands of the people—non-sectarian and free to all, without distinction of race or creed—uniform textbooks—Public School Fund voted every year by the Provincial Assembly. School Districts may be formed where there are 15 pupils between 5 and 15 years—the people choose every year from among themselves three School Trustees or six in cities, to manage schools—Female suffrage in the election of Trustees—Trustees get money from "Public School Fund," on application endorsed by Superintendent of Education—Teachers, three grades—appointed or removed by Trustees—must have certificates of qualification from the Department of Education.

The paid banking capital of British Columbia is $2,433,333, exclusive of private banking business. The value of the exports of the province in 1888 was $3,928,077, and of the imports $3,509,951. This shows a trade far larger in proportion to population than any province of the Dominion. Taking the item of exports, the shipments per head of population in 1888 were as follows: British Columbia, $39; Quebec, $26; N. B., $23; N.S., $17; Ont., $15; P. E. I., $10; Manitoba, $9.

The province has its own legislature controlling its local affair.

It consists of a Lieutenant-Governor, appointed by the Governor-General of Canada, an Executive Council of four members, and a Legislative Assembly of twenty-five members, elected by the people for a term of four years. In practice the Executive Council holds office at the will of the Assembly. There are thirteen districts for electoral purposes. A short period of residence, with registration, qualifies voters.

For purposes of municipal government, the people of a rural locality with over 30 male residents may be formed into a "Municipa-



A BRITISH COLUMBIA SALMON RIVER.



lity," and may elect from among themselves Councilors and a Warden to manage all local affairs.

WAGES IN B. C.

Stonecutters, stonemasons, and bricklayers	$4 00 to 5 00 per day.
Their laborers	1 75 to 2 00 "
Plasterers	4 00 to 4 50 "
Carpenters and joiners	2 50 to 3 50 "
Ship carpenters and caulkers	4 00 to 5 00 "
Cabinet-makers and upholsterers	3 00
Painters	3 50 to 4 00 "
Shoemakers	2 00 to 3 00 "
Tailors	2 50 to 3 00 "
Tailoresses	1 00 to 1 50 "
Bakers (with board and lodging)	65 00 per mo.
Butchers (cutters)	75 00 to 100 00 "
Slaughterers	75 00 "
Cigarmakers	2 50 to 4 00 per day.
Boys, as strippers &c., from	2 00 to 5 00 per wk.
Printers	45 & 50 cts. a 1000 ems.
Waggon-makers	3 50 to 4 00 per day.
Tinsmiths, plumbers and gasfitters	3 50 to 4 00 "
Machinists, moulders, pattern and boiler-makers, and blacksmiths	4 00 to 4 50 "
Longshoremen	50 cents an hour.
Female domestic servants	$15 to $25 per month.

Generally speaking supply in all lines is fully equal to demand.

More detailed information for intending settlers may be obtained on application to the Immigration Department, Victoria, B.C., or in England, to Mr. H. C. Beeton, agent general for the province, 36. Finsbury Circus, London.





Section X.

CANADIAN CITIES.

Some samples of Canadian cities, towns and villages, showing their attractions, commercial development and future prospects.

CANADIANS IN THE UNITED STATES.

"THE GREATER HALF OF THE CONTINENT.—"
A TRIBUTE TO CANADA, BY ERASTUS WIMAN.

DESCRIPTION OF NEWFOUNDLAND.

GENERAL INDEX.

CITY OF HAMILTON

AND COUNTY OF WENTWORTH.



NEW CITY HALL.

Hamilton is a city of the Province of Ontario, in the Dominion of Canada. It is situated on the south shore of Hamilton (formerly Burlington)bay, the western extremity of Lake Ontario. It lies just east of the



NEW COURT HOUSE.

80th degree of longitude, and just north of the 43rd parallel of latitude. It is somewhat farther south than Marseilles and Florence—almost on the same line with Toulon and Leghorn.

Bringing down to the latest date the statistics given in the succeeding pages, the following figures of population and assessment are taken from the municipal census of 1888:—Assessment of real property $17,202,248, income assessment $725,030, personal property $3,645,830, total assessment $21,573,108; population 44,299.

Hamilton occupies an alluvial plain lying between the bay and the escarpment which forms the outer rim of the lake basin. This escarpment—locally known as "the mountain"—is the height over which the Niagara plunges at the Falls. The rock strata of the Hamilton escarpment belong to the middle Silurian geological system. Counting from their base upwards, they form three well defined groups known as the Medina, Clinton, and Niagara formations. Good building stone is found in both the Medina and Clinton groups, though a great part of the Medina series is a friable shale, the detritus of which mainly forms the fine fruit growing lands between the escarpment and Lake Ontario. It is through the Medina formation that the Falls of Niagara have cut their stupendous gorge, and in feeble imitation each streamlet falling over the escarpment cuts through these pasty shales a gully of considerable size. From its summit a magnificent view may be had. The city lies immediately below, the squares in the centre as distinct as those of a chess board, while in other parts the luxuriant maples with



which the streets are lined almost hide the dwellings from sight. The broad blue waters of Lake Ontario stretch away to the eastern horizon. To the northward the view is closed in by a continuation of the height on which the observer stands. The plain is covered in all directions with fruitful farms and dotted with thriving villages. The spires of Toronto may be dimly discerned on the north side of the lake, forty miles away; and on a clear day the smoke of Niagara, at about the same distance, may sometimes be seen.

The agricultural productions of the country surrounding Hamilton are rich and varied. Besides all the cereals grown in temperate climates, maize is produced in considerable quantities. All the vegetables known to the British market are grown abundantly, and some which do not ripen in England are plentiful and cheap. At the proper season tomatoes are sold for from one shilling to two shillings sterling per bushel. Fruit is grown in wonderful variety and profusion. Apples, cherries, peaches, plums, pears and grapes are the most common. Last autumn very fine grapes were sold in the Hamilton market, in quantity, at a half-penny a pound, but that is materially below the ordinary price.

At the opening of the present century the ground on which Hamilton now stands was covered with forest. A dozen years later it was occupied by farmers, and gradually a hamlet grew up at the spot which is now the center of the city; but it was not till 1833 that a municipal organization was effected. In 1836, just fifty years ago, the inhabitants numbered 2846, and the assessed value of property was less than £35,000 sterling. Ten years later the population was found to be nearly 7,000, and a city charter was obtained. The growth of population since that year is shown in the following table:

1851	14,112	1871	26,716
		1876	31,708
1861	19,096	1881	35,961
		1886 (estimate)	41,000

The assessed value of property last year was £4,000,000 sterling.

Hamilton is in direct railway communication with all parts of the province, while she has by the great lakes and rivers water communication from Chicago, Duluth and Fort William at the west to the Atlantic seaboard.

The city is represented by two members in the Dominion Parliament, and by one in the Ontario Legislature. It has two daily newspapers. Its local affairs are managed by a city council composed of a mayor and twenty-one aldermen. It is amply supplied with excellent water from Lake Ontario. The present consumption is at the rate of about 80 gallons daily to each inhabitant. A police force of 50 men is found ample to preserve the peace; and a highly efficient fire department has been able to save the city from serious loss by fire. The streets are partly lighted by gas, and partly by electric lamps. It is no exaggeration to say that in all material interests Hamilton is now more prosperous and its progress more rapid than at any former period.

MANUFACTURING INDUSTRIES OF HAMILTON.

No other Canadian city has won for itself the industrial celebrity that Hamilton has attained. The city is often called the Birmingham of Canada, and though comparison with the world's great workshop in the English midlands is presumptuous, it is not altogether unwarranted. A place, within the memory of living men transformed from the wilds of a forest, can necessarily in but few things be compared with Birmingham. In one point, however, such a comparison may not be unseemly. Hamilton resembles the larger and older hive of industry in her thrifty application of skill and capital to widely diversified industrial operations. This has been her distinguishing characteristic for at least a generation. Within that period, manufacturing establishments on a scale and with equipments in keeping with the latest demands for cheap and efficient production, have successively sprung up within her limits. Her increasing workshops have steadily added to her population and enhanced her wealth. Scarcely an important branch of industry is left altogether unrepresented.

Her factories, equipped with modern machinery and the latest labor saving devices to minimize the cost of production, maintain a daily output of innumerable articles of the metal, wood, and leather

industries, of textile fabrics, and of glassware, pottery, and clothing. The curing and packing of meats, and canning of fruits and vegetables, are also carried on in accordance with advantageous methods peculiar to the western side of the Atlantic.

The last census of Canada, taken in 1881, shews how various the industries of Hamilton are, and gives a clear view of their relative importance in comparison with the manufactures of the whole of Canada. The capital invested in the industrial operations carried on in Hamilton is nearly one thirty-fourth of the whole capital invested in manufacturing industries throughout the whole Dominion, and the proportion of finished goods is nearly in the same ratio. The average annual wages of each person employed in Hamilton industries amounts to $345.93. This includes the boys and girls as well as the adults employed, and is in excess of the average earnings of similar employes, taking the whole of Canada into account. Including the whole manufacturing population of Canada, the average yearly earnings per person employed amount to $233.11. The exact returns of the Dominion census for 1881 are:

	Capital invested in Manufacturing Operations.	No. of Hands Employed.	Amount of Yearly Wages.	Value of Raw Materials.	Total Value of Articles Produced.
Dominion of Canada....	$165,302,623	254,935	$59,429,002	$179,918,593	$309,676,068
City of Hamilton.....	4,825,500	6,493	2,246,127	4,303,693	8,209,489

The same official census of the Dominion Government gives an analysis of the trades and industries thus summarized. The list of the Government is printed here just as it appears in the official census report. It is well worth perusal, and has a value apart from its relation to Hamilton, for it pictures, better than words, the daily life of a medium-sized Canadian city standing in fair repute with its neighbors for enterprise.

CENSUS RETURNS, 1881: INDUSTRIAL ESTABLISHMENTS OF HAMILTON.

INDUSTRY.	No. of Factories or Workshops.	Employes.				Yearly Wages.	Value of Raw Material.	Value of Articles Produced.
		Men.	Women	Boys.	Girls.			
Button Making	1	1				$ 300	$ 500	$ 1,000
Car and Locomotive Works	2	439		25		217,154	70,349	287,503
Carpet Making	2	3		1		1,477	590	2,440
Coffee and Spice Mills	2	8		4		4,200	27,000	39,000
Cork Cutting	1	2		1		728	60	1,600
Cotton Factory	1	28	45	3	6	25,000	100,000	145,000
Fittings and Foundry Working	10	365	2	26	1	157,960	297,800	522,140
Fire-proof Safe Making	1	7				2,500	2,000	6,000
Glass Working	4	218	1	76		111,300	117,200	295,000
Glue Making	1	3				1,200	1,000	2,000
Indian Wares	1	12				3,000	4,000	8,000
Iron Smelting Furnace	1	40				12,000	45,000	100,000
Lamp and Chandelier Making	1	26	3	3	3	5,000	5,000	18,000
Mattrass Making	2	2		1		700	700	1,800
Nail and Tack Factory	1	35		15		25,000	100,000	150,000
Native Wine Making	1	3				3,000	2,500	4,000
Paper Bag and Box Making	2	4	5			1,900	10,000	13,940
Plaster and Stucco Work	1	1				150	100	500
Rolling Mills	1	200		25		100,000	250,000	400,000
Sewing Machine Factories	3	316		32		129,198	107,112	301,236
Shirt, Collar and Tie Making	8	4	128			28,050	81,700	121,500
Manufacture of Shipping Materials	1	4		3		5,000	10,000	15,000
Vinegar Factories	2	5				3,200	40,000	54,000
Whip Factories	4	40	23			10,900	26,200	51,000
Window Shade Factory	1	3				1,300	1,000	3,000

Butter Factory	1	15				6,000	36,000	40,000
Straw Working	1	5	20			4,000	5,000	10,000
Trunk and Box Making	6	32	15	6		12,730	25,880	42,600
Wig Making	1	2	4			1,000	500	2,000
Patent Medicines	2	14	10	2	1	7,000	37,000	70,000
Rope and Twine Factory	2	18		5		7,000	15,250	25,460
Musical Instrument Making	3	23		3		13,000	18,000	48,000
Paper Factory	1	8	14		4	5,300	18,000	36,000
Hosiery	4	6	20			5,800	4,500	12,200
Gas Works	1	24				9,000	18,000	59,650
Gold and Silver Smithing	2	2				1,000	800	2,950
Gun Making	2	6				1,750	1,225	4,200
Engine Building	1	50				26,000	25,000	58,000
Engraving and Lithographing	2	24		2		10,400	25,025	45,600
Aerated Water Manufacture	4	11	2	1		2,286	3,050	11,400
Carving and Gilding	5	14		2		5,920	5,190	14,900
Spinning Wheel Making	1	7				2,000	5,000	10,000
Tobacco Working	8	184	21	44	40	85,400	191,300	329,150
Wood Turning	1	3				1,100	300	1,600
Potteries	3	15		2		6,450	3,460	11,360
Soap Factories	4	22		2		9,040	72,500	134,500
Dyeing and Scouring	1	1	2	1		300	400	900
Edge Tool Making	1	6		1		2,500	2,500	6,000
Miscellaneous Wares	11	79	27	8	4	41,060	58,150	124,900
Chemical Products	2	6	2			1,320	6,800	13,500
Basket Making	2	3	1			800	150	1,050
Book Binding	5	10	12	3	3	7,500	8,050	18,800
Sash, Door and Blind Factories	7	134		3		46,400	116,600	197,300
Ship Building	1	5				3,640	1,000	5,200
Stone and Marble Cutting	12	59		1		24,780	40,700	85,550
Printing Offices	9	153	6	53		84,905	65,950	217,479
Pump Making	3	9				4,800	6,050	20,150
Meat Curing	7	66	3	1		23,750	189,600	238,600
Painting, Glazing, etc	8	36				11,175	8,850	23,035
Pot and Pearl Asheries	1	3				1,040	250	2,000



CENSUS RETURNS, 1881: INDUSTRIAL ESTABLISHMENTS OF HAMILTON.

INDUSTRY.	No. of Factories or Workshops.	Employes.				Yearly Wages.	Value of Raw Material.	Value of Articles Produced.
		Men.	Women.	Boys.	Girls.			
Furriers, Hatters, etc	6	48	75			$ 36,775	$ 61,700	$125,700
Jewellers and Watchmakers	5	11				2,360	4,825	13,100
Boat Building	2	3		1		800	375	1,525
Breweries	5	49	1	1		22,968	98,300	162,500
Broom and Brush Making	5	91	3	2	4	27,500	34,683	89,770
Tailors and Clothiers	31	183	235	12		138,330	325,475	590,510
Tin and Sheet Iron Working	12	82		9		34,150	51,650	128,500
Tanneries	4	23	1			8,060	82,700	99,400
Foundries and Machine Shops	18	561		18		240,260	367,150	839,400
Saddle and Harness Making	12	56	1	4		18,540	44,600	88,985
Cooperage	3	11				4,350	10,950	16,600
Dress Making	20	1	260		12	35,044	88,440	157,852
Flour and Grist Mills	3	16				7,680	197,000	242,000
Carpenters and Joiners	19	155		1		35,510	49,995	107,350
Carriage Making	16	150		6		43,960	76,900	152,850
Boots and Shoes	37	260	78	6	1	97,959	146,110	282,130
Brick and Tile Making	8	82		10		20,700	13,200	55,500
Cabinet and Furniture	11	109	8	8	1	44,566	49,070	109,570
Agricultural Implements	1	75		2		36,000	50,000	130,000
Bakeries	22	107	1	10	4	48,832	225,749	309,851
Blacksmithing	13	38		2		15,420	8,890	38,700
		4,935	1,027	447	84			
TOTAL	422	6,493				$2,246,127	$4,303,693	$8,209,486



The Bureau of Industries of the Government of Ontario, publish particulars regarding the earnings of 2,853 employes in the chief cities of Ontario. Their figures in all essential features agree with the returns of the Dominion census.

Many of the industries of Hamilton have made favorable progress since 1881. Several new factories and workshops have been built, and additions and improvements made to some of the old ones.

In textile industries, a cotton factory has been established running twelve thousand spindles. The mills and plant of this company cost $475,000, and their output last year was nearly two millions and a quarter yards of cloth, and a quarter of a million pounds of yarn. These mills employ 390 hands, their annual pay list being $104,000.

In iron working also, a new rolling mill was established last year. The capital outlay of this company is $50,000; number of employes, 30; and the estimated value of annual output $175,000.

New and larger shops have been erected for the chief engine works of the city, and a new factory has also been built by the Wanzer company for the manufacture of their sewing machines. The making of sewing machines has been for some years, and still is, an important industry in Hamilton. The Wanzer company recently invested, in extending their works, $100,000 additional to their capital account. Since 1861 that company has made in Hamilton one million and a half of sewing machines. Their business, small and restricted at first, has become immense, and extends to all countries of the world. Every machine sold by the Wanzer company has been made in Hamilton. Their output of machines has reached 1,500 per week. For years their distributing house in London, England, has advertised their machines in more than twenty languages, and their wares go wherever English commerce finds its way.

Numerous other improvements might be referred to, but enough has been said to show that the manufacturing industries of Hamilton possess a healthy vigour.

THE TRADE OF HAMILTON.

The situation of Hamilton at the head of Lake Ontario affords special facilities for communication with western Canada, with the

Great Lakes of North America, and with the River St. Lawrence. Such advantages for commerce the pioneer traders of Canada were not slow to appreciate, and through their foresight and energy, and the industry of their successors, Hamilton has become an important centre of Canadian trade.

The merchants of Hamilton organized a Board of Trade in 1845. That body, from its inception, has exercised a salutary influence over the mercantile affairs of the city, and has been on the alert to promote the construction of railways, canals and other works, for opening up the resources and trade of the country. The list of Hamilton merchants is an interesting, if not a long one. Several stand in the front ranks of Canadian trade, and some have won more than a Canadian reputation for their public spirit. If personal references were admissable here, an account of the early merchants of the city and their experiences would be an instructive story.

The following official returns correctly show the trade of Hamilton for last year:

Imports of Free Goods to Hamilton for 1885	$1,180,635
Imports of Dutiable Goods to Hamilton for 1885	2,914.397
Total Imports for 1885	$4,095,032

Of the more important articles included in the imports of the year were:

Tea	2,430,764	lbs.
Coffee	86,868	"
Dried Fruits, (chiefly Raisins, Currants, etc.)	1,998,884	"
Soda Ash, and Caustic Soda	493,101	"
Cotton (raw)	1,953,795	"
Raw Leaf Tobacco	2,966,694	"
Pig Iron	10,000	tons.
Manufactures of Wool (value)	$821,069	
Earthenware and China (value)	60,933	
Tin Plate (weight)	49,074	
Settlers' Effects (value)	$57,548	

No portion of the official returns of the trade of Hamilton furnishes a more interesting illustration of the growth of the city than that relating to the consumption of coal:

In 1876 the amount of coal consumed in Hamilton was	26,493	tons.	
" 1880 " " " " "	58,962	"	
" 1885 " " " " "	110,914	"	

The coal consumed in Hamilton last year, as by these official returns, was more than four times that used in the city in 1876, and was nearly a fourteenth part of the amount consumed in 1885 in the

Province of Ontario, which by the Governmental returns was 1,560,000 tons. This increase is due in part to the gradual substitution of coal for wood as domestic fuel, and in part to the extension of manufacturing operations in the city.

MONETARY INSTITUTIONS.

Banking is carried on in Hamilton by the Bank of Montreal, Bank of British North America, Bank of Commerce, Merchants' Bank, Molson's Bank, Traders' Bank, and Bank of Hamilton. The Canada Life Assurance Company was organized in Hamilton in 1847, and its head offices are located there. Neither the position of these offices nor the handsome building in which they are situated is surpassed in the city. The latest returns of the Dominion Government show that this company assures at present 14,877 lives for insurances amounting to $34,890,225; that its revenue last year was $1,336,680, and its expenditure for that period was $632,781.

CHURCHES AND RELIGIOUS BODIES.

Hamilton is the see city of the Diocese of Niagara (Church of England), and of the Diocese of Hamilton (Roman Catholic).

There are in the city six Anglican churches, viz.: Christ Church Cathedral, Church of the Ascension, St. Thomas' Church, All Saints', St. Mark's, and St. Luke's, the latter two being free and open churches.

The Roman Catholics have two large churches, one of brick, (St. Mary's, which is the Cathedral church), one of stone called St. Patrick's, and one smaller church of wood known as St. Joseph's church, used chiefly by Germans.

The Presbyterians number six churches, designated the Central Church, McNab Street Church, St. Paul's, Knox Church, St. John's, and Erskine Church.

The Methodists have nine churches, called the Centenary, Wesley, First Methodist, Zion Tabernacle, Simcoe Street, Gore Street, Emerald Street, and the American Methodist Episcopal Churches.

The Baptists have one large and handsome stone church in the centre of the city with a mission church in a remote portion of it. There is also a Baptist church for colored people.

Besides the above religious bodies there is a Congregational Church, a Reformed Episcopal, Brethren of the One Faith, Believers,

Evangelical Lutheran, Plymouth Brethren, and Salvation Army; the latter having just completed a handsome building of brick, called "the Barracks."

There are also in Hamilton a Jewish synagogue, a branch of the British and Foreign Bible Society, and a Young Men's Christian Association.

Many of the churches of the city are commodious buildings, chiefly of stone and brick, and more or less ornamental in design. The churches are all in their own way active in promoting the spiritual welfare of the community. The efforts of all are zealously directed to imparting religious instruction in Sunday schools, many of which are in a flourishing condition.

The Census Returns of 1881 give the following figures as the numerical standing of the various religious denominations at that time:

Church of England	9,605	Jews	177
Methodists	8,317	Brethren	175
Presbyterians	7,879	Disciples	98
Roman Catholics	7,134	Reformed Episcopal	31
Baptists	1,066	Unitarians	21
Lutherans	618	"Protestants"	20
Congregationalists	472	Universalists	5
Not designated	339	Quakers	4

SCHOOLS AND EDUCATIONAL INTERESTS.

The school system of the city of Hamilton comprises the public schools and the Collegiate Institute, together with a Model School and a Training College for teachers.

In the public schools the course of study, beginning with the Kindergarten, comprises reading, writing, English grammar, composition, English literature, history, geography and arithmetic.

In the Collegiate Institute, which pupils enter at the age of about 14 years after having completed the public school course of study, preparation may be had for entering the Universities, the Medical schools, the Law schools, etc.

In the public schools there is an average attendance of 5,000 pupils and more than a hundred teachers, and in the Collegiate Institute and Training College there is a yearly attendance of between 500 and 600 students, presided over by a staff of 15 masters and teachers.

The schools are managed by a Board of Education consisting of



twenty members, fourteen of whom are elected by the people, and six appointed by the Board of Aldermen.

In the public schools each pupil is required to pay from one dollar to two dollars a year, in return for which the School Board furnishes him with all the books, stationery, etc., required throughout his course. No charge is made for tuition.

In the Collegiate Institute the fees range from two dollars and a half to ten dollars a year, and students supply their own books.

The teachers employed in the different charitable institutions of the city are appointed and paid by the School Board.

In addition to the above public schools, there are also five Separate Roman Catholic schools in Hamilton. The average number of pupils attending these schools is 823, and the number of pupils on their books is 1626. A ladies' school of high grade is also conducted by that denomination, and is held in high esteem.

The Wesleyan Methodists also control a ladies' college in Hamilton, devoted to the higher branches of education for young women. It has been in existence several years, and attracts pupils from various parts of Canada.

The Hamilton Association is an incorporated society for investigating the natural history, botany, geology, and Indian antiquities of the district. It has about one hundred and fifty members who hold monthly meetings. During the thirty years of its existence numerous papers relating to the *fauna*, *flora*, and rock conformation of the country surrounding Hamilton, have been published under its auspices.

Besides the public schools of the city, there are private institutions for commercial and business training, and for art tuition. A public Art school has also been established.

THE CHARITABLE INSTITUTIONS OF HAMILTON.

Foremost amongst these are the National and Benevolent societies. They are, the St. George's, St. Andrew's, Caledonia, Irish Protestant, Catholic Mutual Benefit, and Emerald associations. These societies seek out and relieve cases of necessity and affliction. They render good service to the community, and receive corresponding appreciation and support.

The other charitable institutions comprise a Boys' Home, a Girls' Home, a Home for Aged Women, a Home of the Friendless,



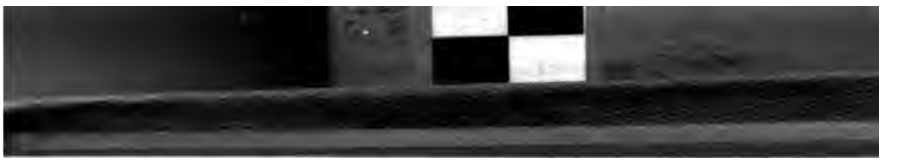
an Orphan Asylum, a House of Refuge, and the St. Mary's Orphan Asylum. These have suitable commodious buildings, the outcome of private benevolence, and are sustained by voluntary contributions. The St. Mary's Asylum is in charge of Sisters of Charity, and the other homes are under the direct management of committees of ladies. The inmates of these homes are well cared for, and the children educated and instructed in the way to make for themselves a respectable living. Donations to these charities include, besides money, flour, meal, meat and vegetables. At Christmas, luxuries are not lacking. Last Christmas one home received fifty turkeys for its ninety inmates.

The number of inmates at present in these charitable homes is : Boys' Home, 95 boys, aged from 5 to 14 years ; Girls' Home, 72 girls, ages from 3 to 13 years ; St. Mary's Orphan Asylum, 86 girls ; Aged Womens' Home, 24 aged women ; Hamilton Orphan Asylum, 28 boys, 4 girls ; House of Providence, 98 boys, 45 aged men, 60 aged women.

Hamilton possesses an hospital for the sick and injured. It was built a few years since at a cost to the city of $53,685, and can accommodate 150 patients. The pavilion style of construction was adopted, with approved methods of obtaining a copious supply of light and air. Last year 673 patients were admitted. It is sustained by the city, aided by an annual grant from the Provincial Government, and by contributions from such patients as can afford to pay for maintenance. Last year the Government grant was $7,458, and the amount paid by patients $1,573. The management of the institution is under the direction of an Hospital committee appointed yearly by the city council. Gratuitous attendance is rendered by the medical practitioners of the city.

THE COUNTY OF WENTWORTH.

The first settlement was made in the County of Wentworth in 1786, just 100 years ago, and the population now, exclusive of that of the City of Hamilton, is 28,886, of which 24,237 is designated as rural. There are 274,348 occcupied acres in the county, with an assessed valuation of $12,161,463 for the real property, and $827,104, for the personal property. Of the occupied land 210,384 acres are cleared, there are 47,467 acres of woodland, and 17,181



acres of swamp or waste land. Situated at the head of Lake Ontario, the climate of Wentworth County is well adapted to the production of fruit, and large quantities of apples, peaches, pears, plums, strawberries, cherries, raspberries, etc., are produced for sale in the Hamilton market, and for disposal to the northern portions of the Province, which are easily reached by railway. The native woods are maple, beech, pine, cedar, oak, butternut, hickory, black walnut and chesnut, for all of which there is a large demand for fuel, furniture or building purposes. In 1884 the fall wheat raised in Wentworth County was worth $689,400; spring wheat, $84,137; barley, $180,874; rye, $11,238; peas, $121,156. The estimated value of farm land was $13,272,700; of farm buildings, $4,434,557; of implements, $1,106,687; and of live stock, $2,018,067. The 30,542 acres sown with fall wheat produced 856,398 bushels; 5,047 acres produced 103,363 bushels of spring wheat; 11,185 acres, 337,451 bushels of barley; 29,261 acres, 1,311,771 bushels of oats, 1,157 acres, 18,824 bushels of rye; 8,295 acres, 188,131 bushels of peas; 4,239 acres, 339,120 bushels of Indian corn; 617 acres, 11,723 bushels of buckwheat; and 169 acres, 4,129 bushels of beans; 4,441 acres produced 687,543 bushels of potatoes; 442 acres, 222,472 bushels of mangold wurtzels; 225 acres, 91,607 bushels of carrots; 1,862 acres, 868,791 bushels of turnips; 43,357 acres, 73,707 tons of hay and clover, and there were 44,379 acres in pasture, and 9,340 acres in orchard and garden. Wentworth produced 28 bushels of fall wheat to the acre in 1884, when the average production for the Province of Ontario was 24 bushels; her barley crop was 30.2 bushels, when that of the Province at large was 27.3 bushels, and her hay crop was 170 tons against 139 tons for the Province. The County had, in 1884, 6,768 working horses; 1,880 breeding mares; 2,913 unbroken horses; 244 working oxen; 12,453 milch cows; 5,097 store cattle over two years old, and 13,568 young and other cattle, among them some valuable herds of thoroughbred Ayrshire Shorthorns and Jerseys. There were 28,650 sheep, 5,953 pigs, 8,238 turkeys, 8,590 geese, and 89,062 other fowls. The total wool produced was 101,877 pounds. The rent per acre for leased farms was $3.29, and farm hands received $164 per year, with board, or $257 per year without board. Female domestics received $1.49 per week, with board. The rate of taxation

for municipal and school purposes is $2.80 per head of population, or $5.60 per $1,000 of assessed valuation.

Lying within easy reach of a manufacturing city of 40,000 inhabitants, the farmers of Wentworth have a profitable market for perishable produce, and the roads throughout the county are kept in a good state of repair. The farmers are generally prosperous, and not a few old men of 70 were born on the farms where they now reside. Annual fairs for the exhibition of farm products and manufactures are held in Hamilton, and in each Township of the County; and for many years the wheat produced in Wentworth County has taken the first prize at the Provincial Fair.

FRUIT GROWING.

In addition to the reference already made to fruit growing, it may be as well to particularize some of the main features of this rapidly growing industry. Strawberries are grown in the open air in every part of the County, and large quantities are shipped annually to the leading cities of the Dominion. The berries begin to ripen about the middle of June, and yield from 4,000 to 10,000 quarts per acre. The market price varies from 2d. to 10d. per quart, the latter price being obtained for the early ripening varieties. No sooner has the strawberry season reached its height than the black and red raspberries begin to ripen, and following immediately in the wake of these is the blackberry, better known as the thimble berry. Raspberries yield from 2,000 to 5,000 quarts per acre, and sell readily at 3½d. to 12d. per quart, while the blackberries sell at from 6d. to 15d. per quart. As high as £360 per acre have been realized as gross receipts, but this was an exceptionable case. Large quantities of currants and gooseberries are grown, and a ready market is found. In fact the demand for these latter fruits is greater than the supply.

Besides these small fruits, grapes are extensively cultivated. Fully 100 different varieties are grown in the open air. Large vineyards that were planted a few years ago are now bearing abundantly and are proving to be very profitable investments. The market price varies from 1½d. to 10d. per pound, according to kind and quality. Fully 400 tons were shipped last year, besides large quantities that were used in making jam and wine. The Niagara, Concord and Delaware are the leading varieties. Grape growing and the cultivation of small fruits are yet in their infancy in this County.



The quantity grown, and the area of land devoted to these purposes, are increasing from year to year with amazing rapidity. Experience has shown that there is no part of this Province in which both soil and climate are so well adapted to fruit growing as that section of country that surrounds the head of Lake Ontario, and extends along the southern shore. Every facility for shipping is furnished by the railway companies, and this industry bids fair to become a very profitable one.

Of the large fruits, apples, pears, peaches, plums, cherries, apricots, nectarines and quinces are successfully grown, the three latter, however, being more for home use than for market purposes. On every farm there is an orchard, varying in size from one to twenty-five acres, and containing apple, pear, plum and cherry trees. These orchards are found to be quite as profitable as any department of the farm, for after supplying all the fruit required for home use a large supply is left for which there is always a ready market. Large quantities are shipped to foreign markets. The apples grown in this section of country being superior in color and flavor, command the highest market price. Peaches can only be grown profitably in favored localities. The best peach district lies east of Hamilton, along the southern shore of Lake Ontario. When the locality and season are favorable they are very profitable, as they can always be sold at remunerative prices. Orchards in the prime of bearing yield a profit per acre of £20 and upwards.

Another fruit that can be very profitably raised is the melon. All varieties of this delicious fruit can be successfully grown in the open air. Enormous crops of the finest quality, both in regard to size and flavor, are harvested annually. The demand is good and the prices remunerative.

Hops have been cultivated successfully for upwards of a quarter of a century in this County, and the soil and climate have been found by experience to be particularly well adapted to their cultivation and growth. The principal market so far has been the home one, but large shipments have been made to the New York and English markets, and the prices realized have been as high as those received for the best American hops. The average profit per acre makes this a very desirable addition to the list of profitable farm products.



EDUCATION.

For educational purposes the County of Wentworth is divided into 73 school sections, in each of which is situated a comfortable and commodious schoolhouse. Of these schoolhouses, 43 are brick, 16 stone, and 14 frame. They are so situated that no child has to travel more than two miles to reach one of them. The number of pupils enrolled is 6,250. These are taught by 92 teachers, giving to each teacher an average of 68 pupils. The school year consists of 220 teaching days, and the average time the schools are kept open varies from 210 to 215 days. The salaries of male teachers average £90, and of females £60 per annum. Pupils are regularly instructed in reading, writing, spelling, arithmetic, geography, grammar, composition, history, music and drawing, object lessons, lessons on useful knowledge, temperance and hygiene, while drill for boys, and calesthenics for girls are taken up as occasional subjects for instruction. Nor is the moral education of the pupils neglected; each teacher is required to inculcate, both by precept and example, those principles which underlie a well formed character. Scripture readings are used daily. These schools are supported by a grant from the Ontario Legislature, a grant from the Municipal Council of the County, interest on invested funds, and a tax levied upon the assessable property of each School Section. The average annual cost for education in the Public Schools, which comprises tuition, and the necessary schoolroom accommodation, is £1, 7s., 6d. per pupil. Books and stationery are not included in this amount. All the teachers employed have attended either the County Model School, or one of the Normal Schools, and are therefore trained to the work of teaching. In 18 of the 73 sections, two or more teachers are employed, one as head teacher and one or more as assistants. The pupils attending these schools are well grounded in the elements of an English education, and possess sufficient knowledge when they have passed through the Public School course to enable them to transact the ordinary business of life, and discharge the duties of citizenship properly. Those who desire it are prepared for admission into the High Schools and Collegiate Institutes, and from them they pass into the University. All of the Public Schools are under the supervision of the County Public School Inspector, whose duty it is to see that the law and regulations are properly observed and the schools conducted in accordance therewith.



THE TOWN OF DUNDAS

Is situated in a beautiful valley, about five miles to the west of Hamilton, and is noted for its extensive manufacturing industries, the principal of which are: The Dundas Paper Mills, the Drop Forging Co.'s Works, The Gurney Agricultural Implement Works, The Wilson Foundry and Engine Works, McKechnie & Bertram's Tool Works, Maw & McFarlane's Foundry, Wilson's Axe Factory, Lennard & Sons' Knitting Factory, The Dundas Stove Co.'s Works, The Screw Factory, The Dundas Cotton Works, Bowman's Planing Factory, and the Wentworth Flour and Oat Meal Mills. These give employment to a large number of mechanics and laborers.

The different religious denominations are well represented, and the Methodists, Presbyterians, Episcopalians, Baptists and Roman Catholics have comfortable and commodious churches. In educational matters, the town is fully abreast of the times, for it supports a High School, with two teachers, a Public School, with nine teachers, and a R. C. Separate School, with three teachers. The Public and High School building is one of the best in Ontario, and is well lighted, heated and ventilated. There are upwards of 600 pupils enrolled in the Public Schools, between 70 and 80 in the High School, and about 200 in the Separate School. In the Public Schools the foundations of a good English education are laid, and pupils are prepared for admission into the High School. Pupils in the High School are instructed in Classics, Modern Languages, Advanced Mathematics and Higher English, as well as being trained in a Commercial Course. The Separate Schools do about the same work as the Public Schools. There are two weekly newspapers published in the town, the *True Banner* and the *Standard*, both of which circulate in the surrounding country. The town is lighted with gas, the streets are well paved, and comfortable sidewalks are provided. There is a station on the main line of the G. W. Div. of the Grand Trunk Railway at which all trains stop. The Hamilton and Dundas Street Railway connects it with Hamilton. Its population is estimated at about 4,000, and there is an excellent library of nearly 8,000 volumes in connection with the Mechanics' Institute.

WATERDOWN

Is an incorporated village, lying about six miles to the north of Hamilton. It is beautifully situated upon an elevated plateau, and

commands a fine view of Hamilton and Lake Ontario. The country surrounding it is an excellent agricultural district. This village is famous for its good High and Public Schools. The pupils from this School have won distinguished honors at the Departmental Examinations, and the people have just reason to be proud of its record. There are some 300 pupils attending these Schools, and of these about 80 are in the High School Department, the balance being in the Public Schools. There are four teachers in the Public School Department, and two in the High School. The Public Schools prepare pupils for admission into the High School, while the High School gives instruction in Classics, Modern Languages, Advanced Mathematics, Higher English, and the rudiments of Commercial education. In the village are half a dozen churches owned by the leading religious denominations. Situated on a fine stream of water, and within the limits of the village is the Robson Brothers' Flouring Mill. This mill has a capacity for turning out 100 barrels of flour per day. A short time ago the proprietors fitted up their mill with improved roller machinery, for producing flour of the finest quality. There is also a Rake Factory along the stream, from which rakes are sent to all parts of the Province.

The sketch given in these pages outlines the more salient features of one of the older settlements in Western Canada. Though but a sketch it is accurate and trustworthy. In it the statistics of the Dominion and the Provincial Governments are faithfully followed, and it fairly illustrates the results of a century of labor in Canada.





The TOWN of GODERICH.

Goderich is the county seat of Huron, one of the richest and most populous counties in the Province of Ontario. Its early history dates back about 60 years, but mention is made of the locality as far back as the time of Champlain. It is stated that this famous explorer visited the mouth of the Maitland River in 1618, while on his way to Detroit, his route being along the Ottawa to Georgian Bay, down Lake Huron, through the River and Lake St. Clair and Detroit River to Detroit. Two hundred and ten years after, a Frenchman named Frank Deschamp established a trading post at the mouth of what afterwards got the name of the Maitland, in honor of the Lieut.-Governor of Upper Canada. John Galt, superintendent of the affairs of the Canada Co., by whom the entire Huron tract was owned, determined to plant a settlement at the mouth of the Maitland. The town was named Goderich in honor of Lord Goodrich, at that time Colonial Secretary, afterwards Earl Ripon, and laid out in its present spider's web fashion according to a plan prepared at the Company's office in York. Straggling settlers came in, a steamer built by the company appeared on the waters and plied along the lake ports of Erie and Huron. In 1832 the first Methodist preacher arrived, and, shortly after, the first R. C. priest. By 1833 the settlement gave promise of rapid development, and the whole tract was quickly settled, and a post office was established.

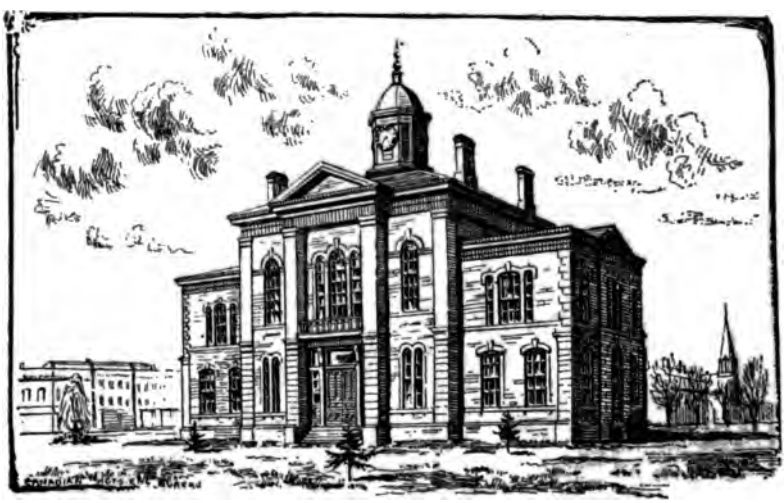
Nature has done much to render Goderich a most attractive spot, and so has the hand of man, and no place offers a more attractive claim for summer rest and healthful sojourn than this beautiful town. Canada's summer climate is the admiration of the world; and the summer breezes that come over the broad

breast of the blue Lake Huron are the messengers of health and refreshing to all who are fanned by them. It would not be invidious to say that Goderich in many respects is the most attractive town in Western Ontario. Its commanding site, 120 feet or more above the level of the lake, and the great variety of picturesque scenery, invest it with a charm possessed by few towns. Everyway you turn a picture is revealed that appeals to the artistic eye. Up the Maitland the prospect is extremely romantic, and along the shore on either side of the town bolder landscapes present themselves. The town itself is unique among Canadian towns, the plan upon which it was laid out being most peculiar and admirable. The high elevation, and the gradual slope towards the lake and river, allow of the most perfect drainage, and the municipal authorities have lost no opportunity of taking advantage of it, the result being a perfect system of sewerage, which carries off the water in an hour or two after the heaviest rainfall has ceased.

The following description of the town, from the pen of Principal Grant, is taken from "Picturesque Canada":

"As seen from the lake Goderich lies in the centre of a large curve of the coast; and with its church spires, public edifices, and pretty private residences, enriched with the bright, green foliage of abundant trees, it has an air of quiet and almost sleepy beauty. On closer inspection, it is obvious that its growth has not been left to accident, nor to the caprices of individual taste, but has been provided for by forethought and plan. Less than a mile from the shore, a small park was laid out in the form of an octagon, in the centre of which is now the County Court House, with cupola and clock, its four sides facing the four quarters of the compass. From this central point spacious streets radiate north, south, east, and west, intersected by other streets at measured distances, along which shade trees have been planted abundantly. Beyond the town, to the landward side, the eye wanders over a vast and fertile plain, bearing in summer all the products of the temperate zone, peaches, almost equal to those of the Niagara district, included. To this rich plain, dark-green patches of reserved forest trees give the aspect of the glorious park-lands of England. Lakewards the boundless expanse of an inland sea

meets the eye, extending its glistening waters to a far horizon. Here and there, at wide intervals, the level floor of water is



broken by the white sails of a ship or fishing boat, or by the dark smoke of a distant steamer

"The corporation of Goderich has wisely secured an extensive portion of the bluff fronting the lake for a public park. Here, a grand prospect is obtained of the lake, its far-extending rugged shores, and the river, in the hollow, winding its tortuous way among grassy islets. Seated on one of the benches, or reclining under the lofty acacia trees, the stranger gazes with never flagging interest on the extraordinary combination of colors that the waters of the lake present. Near the shore, probably because of the wash that stirs up the sand, is a broad band of mingled yellow and earth color; then, green gradually predominates til it becomes pure green; and beyond that the deep blue that reflects the sky. Under the influence of cloud masses, or still more strikingly at sunset, bands of richest violet, purple, and every hue of the rainbow, fuse themselves between and into the main divisions of color, till the heavens are a blaze of indescribable glory, and the lake is one mass of glowing, shifting tints, with definite outlines of such singular beauty that the picture is

never likely to be forgotten by any one who has the soul of an artist.



"Perched on another projecting bluff, that by some special favor is yet preserved from the destruction of the elements, the Lighthouse looks almost sheer down on the harbor. It contains a fixed light, consisting of numerous lamps with silvered reflectors, and sheds its welcome rays far over the dark waters. To the right, lies the harbor in the deep hollow or recess which the united waters of the river and lake have eaten out of the land. A broad breakwater shields it from the wash of the lake, and the entrance is protected by two long piers of crib-work. Massive as these defences are, they cannot altogether resist the



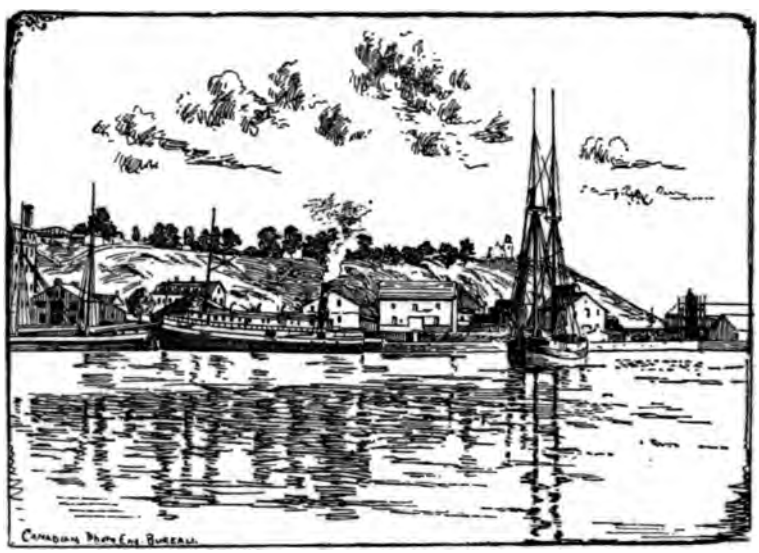
hydraulic force of the waves, when the storm sweeps from the wintry north. As, however, Goderich is one of the very few harbors on this exposed coast into which belated vessels can run for refuge, and is besides a principal shipping port for grain and lumber, the Dominion Government wisely keeps the breakwater in repair."

Another description of Goderich worth reproducing here is the following, written by Mr. J. L. Bates, a well known American journalist, who headed a party of some forty wheelmen in a tour of the western section of the Province in 1884. Our quotation is taken from "Outing," the charming magazine published by the Wheelman Publishing Co., Boston, Mass.:

"We entered Goderich in the evening, and the party rode slowly around the beautiful little circular park, with a handsome court house in its centre, which adorns the very centre of the town, facing which are all the principal hotels, stores and business houses.

"During the night the wind rose until it blew a half gale. Early in the morning the artist, President Bates, and some others, rose and took a spin about the place to inspect it. Goderich is the principal watering-place of Western Ontario, and it well deserves its high reputation for beauty of location and surroundings. The town is built upon a bold headland overlooking the lake. There is a small bay, the entrance of a river, and another bold headland, called "The Cape," on its opposite side, which shows finely from the town. Upon the brow of the headland is a reserved parade ground, with the lighthouse. Here the bluff is almost a precipice, and the view is very fine, embracing many miles of coast, the bay, and the steep side and end of the opposite cape. On this morning, the waves of Lake Huron were beating sullenly at the foot of the bluff; the sun had risen amid drifting clouds, casting checkered lights and shadows over the water, which had a blue-gray hue, of a threatening character. Within the harbor below lay a number of vessels; while, several miles out in the lake, half a dozen fishing smacks, standing in a direct line off shore, were dashing with white wings out to their distant fishing-grounds, regardless of the ominous aspect of the lake and sky. These little craft are periagua rig,—

a rig much used on the lakes for fishing-boats, as it is easily handled by one or two men, and spreads a cloud of canvas to the



light airs for boating. The two large, almost square, fore-and-aft sails, with their broad heads strained flat as boards, and with straight lines, have a peculiar picturesqueness, like Gothic architecture; and the sight of a fleet of them standing out of harbor in a wind is a finer marine view than that of a squadron of the most shapely yachts. And for fleetness it is doubtful which would win, as these boats are built very sharp, light, and strong, and are sailed by the most skilful and daring seamen of the lakes.

"Turning from the lake view the town is a pretty sight, being neatly built, with many fine houses and summer residences, with gardens and ornamental grounds, the business portion clustering about the pretty little circular park heretofore mentioned. All about the neighborhood, within a radius of half a dozen miles, are summer hotels and summer residences, on locations which command the choicest views and other attractions."

RECENT PUBLIC IMPROVEMENTS.

Since the foregoing descriptions were written much has been done to add to the beauty and attractiveness of the town, and to improve its business advantages.

First amongst these improvements may be mentioned the construction of a waterworks system, the supply of water being drawn from a series of artesian wells sunk on the harbor flats to a depth of about 240 feet. From these the water is forced directly into the mains by a pair of magnificent pumps, each having a capacity of 1,250 gallons per minute.





The following is a synopsis of the Government Analyst's report regarding the water from the artesian wells :—

"In 1,000,000 grains of water evaporated to find the amount of solid matter dissolved there were found to be when dried at a temperature of 100° C only 552 grains of solids, and of this only 148 grains were lost by ignition (the remaining solids not darkening), thus showing the water to be remarkably free from organic matter. In the same quantity of water only 4/25 of a grain of nitrogen was found. Without nitrogen, nitrites, nitrates and ammonia, which are substances so deleterious to water, could not exist. Only 10 grains of chlorine were found, not a remarkable thing for a salt region. The oxygen absorbed from the permanganate test at 60° Fah. in 15 minutes was only 4/25 of a grain, and in 4 hours only 1.45 grains, which is another proof of the remarkable absence of deleterious matter. The water is clear, colorless, and sufficiently soft for artesian well water, being softer than the water supplies of London, Eng., Bath, Cambridge, Maidstone, or Shrewsbury; and it is all that can be desired for domestic purposes, being of great organic purity and excellent quality."

Four handsome fountains adorn the Central Park, or Square, and the Harbor Park is also supplied with one. In this park too has also been erected a large pavilion for the comfort and convenience of excursionists, Goderich being a favorite resort for excursion parties from inland points.

Another improvement is the introduction of the electric light. The peculiar formation of the town, and the wide streets, are admirably adapted for a perfect system of street lighting, and probably no other town in Canada is so well lighted as is Goderich. The light is generally in use too in the stores and business places.

Both these systems were erected and are operated by the town from the one centre, and the rates to the consumers of either service are reduced to the lowest possible figure.

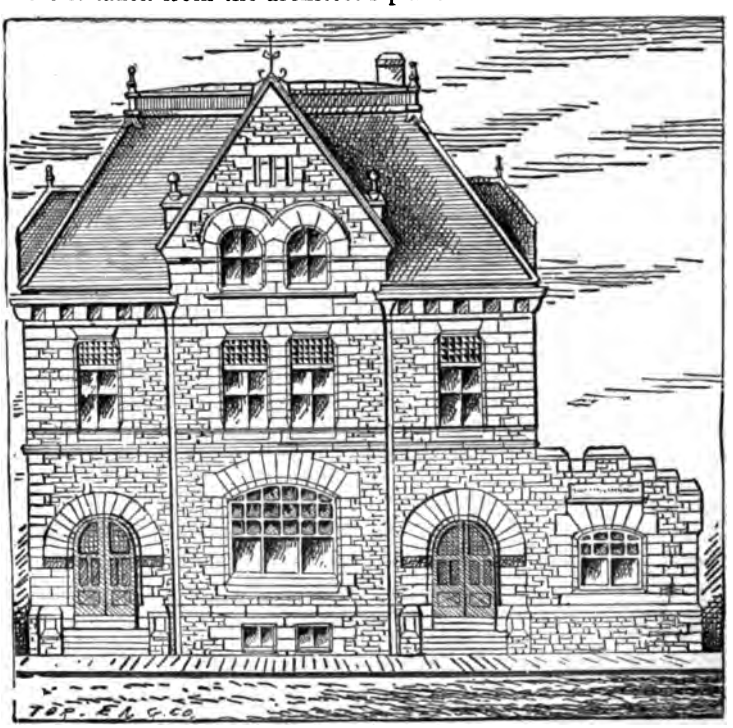
Goderich being the county town, it has always being a leading centre for agricultural and industrial exhibitions, and to meet the growing demands of the annual fairs held, a park of sixteen acres was purchased two years ago and spacious buildings erected thereon, having a capacity in all departments not equalled except in the large cities. The county of Huron is one of the foremost in the Dominion in agricultural interests, and the displays

made at the Northwestern Exhibition each year are unsurpassed even in more pretentious fairs.

The ane expended by the town for the construction of these improvements was $65,000, and the wisdom of the investment is shown by the fact that the revenue derived from each renders unnecessary any increase to the rate of taxation to meet the debentures issued for the amount.

TRADE STATISTICS OF GODERICH.

The importance of Goderich as a port of entry for customs, and a distributing centre for a large number of post offices in the western part of the county, necessitated the erection of a large and commodious public building, and the Government have now under construction a Custom House and Post Office which will cost in the neighbourhood of $20,000. The illustration given here is taken from the architect's plans.



The Customs returns for the year 1887 may be taken as showing the average imports and exports of the town, as reported through the Customs :

	IMPORTS.		EXPORTS.
QUARTER ENDING.	VALUE.	DUTY.	VALUE.
March 31—Dutiable,	$ 3,443	$ 628 20	
Free,	7,060		$ 16,557
June 30—Dutiable,	18,686	4,130 84	
Free,	3,937		19,677
Sept. 30—Dutiable,	2,649	784 80	
Free,	33,046		34,553
Dec. 31—Dutiable,	9,599	2,064 81	
Free,	3,371		75,297
TOTAL,	$77,791	$7,608 65	$146,084

The trade done through the harbor of Goderich is of very respectable proportions and is increasing yearly, as the Northwest is opened up. During the season of navigation the N. W. T. Company's boats receive a large proportion of their freights from this port, and with the completion of the C. P. R. extension from Guelph will be added a line of that Company's steamers also, making the shipping service to the upper lake ports and our Canadian Northwest more adequate to the growing demands of the traffic in this direction than it has been for the past few years. The following are the receipts at this port by water during 1888 :

Lumber	14.000,000	feet.
Hoops and Staves	2,110,000	
Lath	733,500	bundles.
Brick	97,000	
Salt	3,475	barrels.
Fish	8	car loads.
Cedar Posts	3,500	
Shingles	200,000	
Wheat	300,000	bushels.
Flour	300	barrels.

A complete return of the shipments from Goderich is impossible, as the G. T. Railway authorities refuse anything in the way of information as to the traffic carried over their line. We mention, therefore, in addition to what is reported above as

passing through the Customs, only the following leading items of shipment during 1888;

Lumber	14,000,000 feet.
Wheat	200,000 bus'.
Horses (value)	$35,500.
Cattle and sheep (value)	20,000.
Apples	50,000 barrels.
Salt	100,000 barrels.

SOME LEADING INDUSTRIES

THE SALT BUSINESS.

Goderich has long been known as the centre of the salt industry of Canada, the number of wells sunk here at various times, and the aggregate output, exceeding those at all other points. Salt was first discovered here in 1866, the find being a result of the oil fever which at that time raged throughout Western Ontario. Petrolia and other points were reporting great oil strikes, and with the belief that the oil bed extended into this section also, a company was formed to sink a well. The capital stock was $10,000 and the spot selected on the river flats where now stands the village of Saltford. The late Samuel Platt was the leading spirit in the movement, and to his energy and perseverance was due the discovery of salt. Somewhere about 700 feet had been reached in the boring without striking oil, and the directors of the company were then disposed to give up the search as useless. Mr. Platt, however, had not lost faith in the ultimate success of the quest, and the County Council was induced to offer a bonus of one thousand dollars to secure the boring to at least 1,000 feet. Work was resumed, and just within the 1,000 feet salt was struck, and from this point grew the great salt industry of Canada, which now has a capacity practically unlimited. The business has fluctuated more or less from that period up to the present time, as new wells were sunk at other points, but Goderich has always held the lead over other towns. At present there are five wells in operation, employing on an average twenty-five men each, and with a total capacity of 1,800 barrels of salt per day of twenty-four hours.

The brine from the Goderich wells is of remarkable purity, and the product of our works competes successfully with the best English salt. Each grade from the finest dairy and table, up to coarse salt for the improvement of land, is manufactured here, and in the great Provincial fairs of our Dominion Goderich fine salt has won first place for dairying and packing purposes.

In connection with three of these salt works there are extensive cooperages which supply all the barrels required for shipping the salt.

THE LUMBER TRADE

Has found a most convenient point for its development in Goderich. Our excellent harbor is an easy sailing distance from the lumber camps on the north shore of Lake Huron and the Georgian Bay, and we have unrivalled piling grounds for the storage of lumber from the fleet of schooners which bring the "cuts" here from the mills, where they are assorted for shipment. The breakwater on the north of the harbor and the docks to the east and south are fully occupied each season, the breakwater, which is leased by the Government as a piling ground, returning quiet a handsome revenue. The amount handled each season runs from 12.000,000 to 15.000,000 feet. The Grand Trunk Railway has tracks all through the lumber yards, and when the C. P. R. extension from Guelph is completed Goderich will have facilities for the handling and shipment of lumber not excelled in Canada.

Two large planing mills are run here, one of which manufactures extensively the most improved school furniture, and the advantages possessed by the town in the lumber trade make it one of the most desirable locations for building up a very large export trade in manufactured sash, doors and blinds. The growing demand for this material in the Canadian Northwest, and in Australia and South America, makes the present a most favorable opportunity for the development of its manufacture in Goderich.

SHIPBUILDING

was at one time a very extensive industry in Goderich, but of late years comparatively little was done until 1887,-88, when



three fine tugs for the fishing trade were built here, in addition to the usual amount of repairing and rebuilding. At present a large schooner is being constructed which will have a capacity of some 20,000 bushels, or 320,000 feet of lumber.

THE FISHING TRADE.

The fishing fleet which has its headquarters at Goderich represents a very large proportion of the great business of lake fishing which is carried on in the inland waters of Canada. The present fishing grounds are in the neighborhood of Manitoulin Island, but a considerable portion of the shipments is made through Goderich, and here the fleet is prepared in the spring for the season's work, the winter quarters being in this harbor. At present four tugs and twenty fishing boats comprise the fleet sailing from Goderich. The aggregate number of men employed in the business is about 75.

MISCELLANEOUS INDUSTRIES.

One of the great Ogilvies' mills is located at Goderich, with a capacity of 900 barrels per day. The elevator in connection has a capacity of 175,000 bushels of grain. The firm is known here as Ogilvies and Hutchison. The Grand Trunk Railway Company also has an elevator here, with a capacity of 100,000 bushels.

Other large industries are a foundry, five carriage factories, two pump factories, two tanneries and one pork packing establishment.

GODERICH BOARD OF TRADE.

As far back as 1875 Goderich had a Board of Trade, but after a brief period of activity it ceased operations, and remained dormant until June, 1887, when it was revived, and has been in active existence since, doing good work for the advancement of the best interests of the town. It has committees on statistics, manufactures and local improvements, which in their respective departments discuss and recommend whatever may be found necessary or desirable to help the town forward. Its officers will be found ready and willing to give all information to enquirers on any subject connected with the town, and the Board lends its assistance to the Town Council in co-operating to carry out any matter in the public interests.

SCHOOLS AND CHURCHES.

In both these necessary institutions the town of Goderich is well supplied, and the facilities for the mental and moral culture of its inhabitants are not surpassed in any town of its size in the Dominion. Its schools consist of three ward schools, the Central School, the High School and a Roman Catholic Separate School.



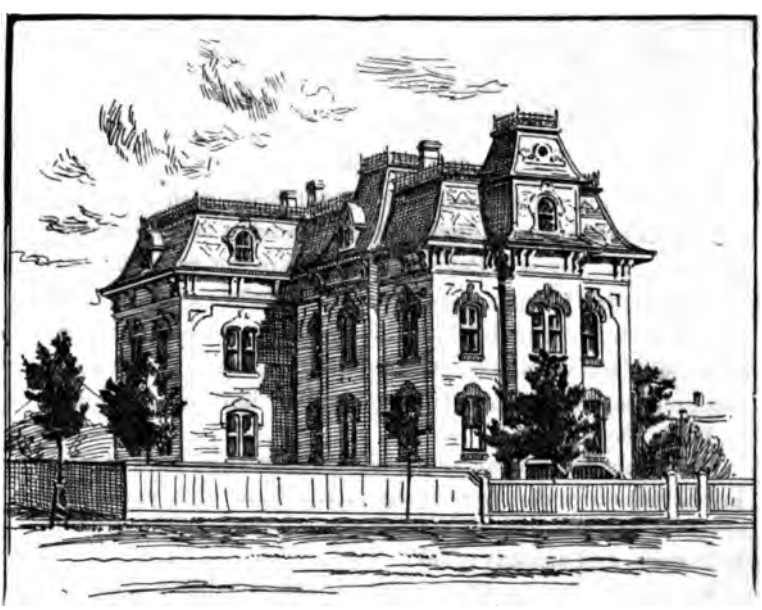
THE PUBLIC SCHOOLS

Have an average attendance of about 600, out of a total on the rolls of 675, at the beginning of the year 1889. The schools are governed by a board of Trustees composed of two representatives from each of the four wards of the town, and the buildings are all well fitted up and every want or improvement found desirable supplied. The staff of the Central School consists of the Princi-

pal, Mr. Robert Park, and five other teachers, and in each of the three ward schools there are two teachers.

THE HIGH SCHOOL

Is a handsome structure of white brick, two storeys high with ornamental slate roof and iron fancy railing and commands a fine view of the lake. It cost with recent additions and improvements nearly $11,000, and has room for 200 pupils. There is at present an attendance of 180 pupils. The Head Master takes charge of the Classics, English and Moderns. A. J. Moore, B. A., the Mathematics and Moderns. S. P. Halls, B. A., the Sciences and Commercial branches. J. B. Kaiser, Drawing and General Work. The school boasts of an excellent library and a laboratory well equipped with physical and chemical apparatus. A room is also specially fitted up with tables and



apparatus, fully furnished with reagents (wet and dry) for practical work by students in Science under the direct supervision of the Science Master. A flourishing Literary Society, having in connection with it a Glee Club, furnishes opportunities for

students to take part in discussions, to give readings, recitations, songs, &c., and to acquire the habits of business societies. With a Board of Trustees ready at all times to supply the needs of the school and a staff of teachers (soon to be augumented by another member) second to none in the province. Students have been, and are being, successfully prepared for the professions, University Matriculation (both junior and senior) and teachers certificates of all grades, as the following statistics for the past 11 years amply testify: Passed—Intermediate, 39; 3rd class, 67; 2nd class, 95; 1st class, 4; University Matriculation, 31; Law, 8; Medical, 5; other examinations, 8.—Total 262.

THE R. C. SEPARATE SCHOOL

Is under the charge of the sisters of St. Joseph's convent, and is beautifully situated, commanding an unobstructed view of the picturesque river Maitland, and the harbor and lake. In addition to the primary and preparatory course for advancement to the High School, special branches of education are taught, such as painting, music and drawing.

THE CHURCHES

Knox Church (Presbyterian) is of red brick with spire, and gallery all round over the auditorium, and has a seating capacity of 1200. Dr. Ure and Rev. J. Anderson are the pastors.

The English Church people have a complete establishment. The church is white brick, gothic design, nave and transept, with spire, and accommodates about 700. There is also a school room and tasteful rectory, all white brick. Rev. W. A. Young, B. D., is the rector.

The Methodist denomination has two churches, both of white brick, that on North street being in the form of a cross, with seats for 900, and that on Victoria street a neat gothic structure with spire, and capacity of 500.

St. Peter's (Roman Catholic) is a frame building, and contiguous to it is a handsome red and white brick convent, with Separate School attached. A white brick presbytery is on the same grounds. Father West is priest.



THE TOWN OF DESERONTO.

The Town of Deseronto, though of comparatively recent origin, already ranks, on account of the extent and variety of its manufacturing establishments and the enterprise of its people, among the most important towns of the great province of Ontario. The town is situated in the south-east corner of the County of Hastings on the Bay of Quinte, an arm of Lake Ontario. It is eighteen miles from Belleville and thirty miles from Kingston, and is connected by the Bay of Quinte Railway with the Grand Trunk Railway of Canada, some three miles distant.

"Deseronto," the name assumed in 1881, is a Mohawk word, the meaning of which is "an object which has been struck with lightning." Captain John Deseronto was the chief who after the revolutionary war led fifteen canoe loads of Mohawk Indians to the Reserve, granted them in the Township of Tyendinaga by George III, as a reward for their loyalty to the British government. John Deseronto was undoubtedly a greater warrior than the famous Brant, though not so successful in pushing himself into notice. In the year 1855 John Culbertson, a natural son of Culbertson, a Scotchman, who kept a store in Kingston, by Margaret, a daughter of Captain John Deseronto, applied to the chiefs of that day for a grant of land on account of the services of his grandfather. After some time the grant of eight hundred acres off the east end of the Tyendinaga Reserve was made, and in 1830 Culbertson built a landing on the bay which became known to travelers and the people of the district as Culbertson's Wharf. About the year 1837 Culbertson conceived the idea of a village about his residence, and had a small plot surveyed for that purpose, giving it the name of Deseronto, after his grandfather. In July, 1848, the point near the centre of the water front of the present town was sold to an American Company, and for many years the little hamlet was known as Mill Point. In 1851 a post-office was opened in a little log house. This office was afterward removed about half a mile east of the present town, and received the name of Bowen from the postmaster. The American company referred to above commenced operations in 1848, and consisted of Messrs. H. B. Rathbun, Thomas Y. Howe and L. E. Carpenter. The two latter withdrawing, the business was continued by the late Hugo Burghardt Rathbun, who may thus be regarded as the builder and founder of Deseronto.



Mr. H. B. Rathbun continued the business alone until 1863, when he associated with himself his son, Mr. E. W. Rathbun, the present manager of The Rathbun Company, who took the direction of the business then known as the firm of H. B. Rathbun & Son. In 1880 Mr. F. S. Rathbun was admitted into the firm, which in 1883 was incorporated as The Rathbun Company, well known as one of the greatest commercial corporations in the Dominion of Canada. The business of the Messrs. Rathbun continued to rapidly increase, and as a consequence Deseronto itself grew steadily in population and importance. In 1871 Mill Point was erected into an incorporated village, the area of 460 acres from the Township of Tyendinaga being set apart for the purpose. The population at that time was 864. Mr. W. R. Aylsworth was elected the first Reeve of the village, thus representing it in the County Council of Hastings. The village continued to grow rapidly in population, and Jan. 7th, 1889, by proclamation of the Lieutenant Governor-in-Council, it became the incorporated town of Deseronto, the population having been found by a special census ordered by the Council to be 3,200. The following figures will show the increase in population, taxes and assessed value since 1871 :—

ASSESSMENT, TAXES AND POPULATION SINCE INCORPORATION.

Taxes.	Assessed Value.	Taxes.	Population.
1872	$ 65,000	$1,480	865
1873	74,410	1,802	....
1874	81,698	2,279	989
1875	84,348	2 471	....
1876	89,725	3,390	995
1877	110,200	2,438	1,017
1878	116,375	2,902	....
1879	131,525	3,025	1,077
1880	143,500	4,305	1,138
1881	154,575	4,328	1,146
1882	218,700	3,936	1,535
1883	234,250	5,153	1,708
1884	251,550	5,282	1,864
1885	269,700	6,203	2,213
1886	275,250	6,881	2,263
1887	296,850	7,421	2,403
1888	396,500	6,740	*3,205

The town entered on its new career practically free of debt, and was thus in a condition singularly favorable for undertaking new public enterprises which might be deemed necessary.

The principal trade of Deseronto is the manufacture of lumber, for which, by its admirable position on the Bay of Quinte, the town pos-

*As per special census ordered by the Council.



sesses superior advantages. The harbor is excellent, and affords every facility for loading vessels and safely holding rafts of logs at all seasons of the year. The Trent, Moira, Salmon and Napanee rivers and the various lakes with which they are connected drain a large district of country, and serve the purpose of floating to the mills on the Bay the millions of logs cut in the vast forests of Central Ontario. The Bay of Quinte Railway, and Napanee, Tamworth & Quebec Railway controlled by the Rathbun Company, connect with the great trunk lines, and with proposed extensions and connections will render a vast district of mining and lumbering country tributary to Deseronto, and greatly assist in conveying raw products to the mills and factories. The saw mills of Deseronto are on an extensive scale, and thoroughly equipped with all the modern labour-saving appliances and powerful machinery. The stranger, as he emerges from the railway station or steps from a steamer on the dock, finds himself gazing with open mouth at the huge wire rope conveyor, the active motors or other devices by which work is expedited and the cost of manufacture lessened. The mills and factories give employment to over one thousand operatives in Deseronto and in the various ramifications of their immense operations the Rathbun Company have over three thousand hands on their payrolls. The lumber manufactured, as well as vast quantities of shingles, railway-ties, posts, &c., are chiefly shipped by steam barges or sailing craft to Oswego, Charlotte, and other ports in northern New York, which are only a few hours distant by steam. Thence they are distributed by canal and rail to the principal markets of the United States.

The Messrs. Rathbun have solved the problem of utilizing to advantage all the refuse lumber, sawdust, etc., of their saw-mills, and so well have they succeeded that, as has been observed, Deseronto exhibits the most complete industrial organization in Canada. In the accomplishment of this beneficial result, various industries subsidiary to the manufacture of lumber have been established. Huge dry-kilns have been erected, and a large sash and door factory added, whose products are sold in the domestic markets or shipped to the United States, England, Australia, South Africa, and other parts of the world. The Deseronto Car Works established a few years ago already give employment to many skilled mechanics. The Deseronto Terra Cotta Works are the latest industry. These works are on an enormous scale, and to the visitor cannot fail to be of absorbing interest. Here the superfluous sawdust from the mills, which is not required as fuel



to furnish motive power, is combined with clay in the manufacture of terra cotta fire-proofing, and other materials now coming rapidly into general use in the better classes of public buildings, warehouses and offices in the great cities of the United States and Canada. These works were the first of the kind established in Canada, and it is satisfactory to find that their erection has justified the expectations of their promoters. In close proximity to the Terra Cotta Works are the Deseronto Chemical Works; these are the outcome of years of patient, persevering experiment, and will perhaps best serve to illustrate what may be effected in the utilization of what has been in the past considered of little use or value. In connection with these a nest of capacious charcoal kilns has been erected, where coarse woods of the forest and some of the refuse of the saw mills are converted into charcoal, which finds a ready market in the larger cities. The gases and vapors generated in these during combustion are conveyed into the main building, where the process of wood distillation is conducted on a large scale. Wood alcohol, pyrolignous acid, creosote, cedar oil, acetates of lime, etc., are evolved in large quantities for domestic and foreign markets. These examples will suffice to illustrate what is done in Deseronto in the way of utilizing waste material. To such an extent, indeed, are the refuse lumber, sawdust, etc., utilized, that in Deseronto, where more than fifty million feet of lumber in various forms is manufactured by the Rathbun Company, there is not one bushel of sawdust or a cord of clips or edgings which is not saved or turned to profitable account in the industries of the town. In this respect it is safe to say that Deseronto occupies a unique position among the lumber manufacturing centres of the continent.

In addition to these industries, which are dependent upon the saw mills, Deseronto is the seat of extensive flour mills, brick yards, machine shops, etc. The Deseronto ship yard is an important department, at which several of the finest craft on Lake Ontario have been designed and constructed. The marine railway in connection with this yard is found very convenient for effecting repairs to vessels. It is also supposed at an early day that blast furnaces for the production of charcoal iron will be erected, as valuable beds of iron ore are found along the lines of railway already mentioned in this sketch, and it is thought that this branch of manufacturing industry can be profitably carried on in Ontario. Should this prove true, the importance of Deseronto as a manufacturing centre would be immeasurably increased. In the words of the Toronto *World*, "It has so many

advantages, it has secured such an excellent start, and its development is progressing along such natural lines that it must become great and thriving. There is nothing like it in Ontario."

The situation of Deseronto while convenient for business is also beautiful. The town is situated on a gentle acclivity which rises up from the Bay of Quinte, and the rising ground at the back of the town commands an extensive prospect of exquisite scenery. The Bay of Quinte is far famed for its picturesque beauty. As steamers during the period of navigation are hourly calling at the docks on their routes up and down the Bay, tourists will find Deseronto a convenient place from which to make excursions to the various points of interest in the vicinity. The Lake-on-the-Mountain, a charming and favorite resort of pic-nic parties, is in sight; and Adolphustown, rich in historical associations connected with the early settlement of the province, is only an hour's sail distant. The trip up the Napanee river affords some charming snatches of scenery, and the sail to Picton, and drive thence through a rich agricultural country to that natural phenomenon the sand banks on Lake Ontario, cannot be easily excelled in any country. To the west of the town is the Indian reserve of Tyendinaga, the home of an interesting band of the famous and formerly warlike Mohawk nation. The fishing in the Bay of Quinte is excellent, and annually attracts enthusiastic anglers from all parts of the United States, while Hay Bay, the resort of innumerable flocks of ducks and other water-fowl, is only a few miles distant from Deseronto. It will be thus seen that Deseronto has other attractions besides those which we associate with the presence of tall chimneys and the busy hum of tireless machinery.

The principal religious denominations are all represented, and possess commodious edifices, some of which are justly considered models of architectural beauty. The public schools occupy a commanding situation overlooking the town, bay, and surrounding country, and the town council has only recently granted $12,000 towards the erection of a high school building, which when completed will be one of the most handsome and complete structures of the kind in the province. The streets are lit with gas, and an agitation has already commenced in favor of the introduction of a system of water-works. The various secret and friendly societies are all represented, and these organizations appear to find in Deseronto a congenial soil. The Press is represented by *The Tribune*, a weekly newspaper, ably edited by Mr. S. Russell.



PRESTON.

An incorporated village—but daily aspiring to the dignity of a town—in Waterloo County, Ontario, is situated on the river Speed near its confluence with the Grand river. The location otherwise deserves to be specially mentioned, not only for its beauty, but its adaptability for the site of a large town, considering its great and pure water supply, both for power and sanitary purposes, and every other natural feature for most thorough easy drainage. Its railway facilities are equalled by few *towns* and are even better than some cities. Mails are received and despatched every few hours, local railway, telegraph, telephone and express offices, and every facility exists for the rapid transaction of business. The streets are wide and straight and lighted by lamps, and miles of trees and plank sidewalks border each side. There are eighteen different manufacturing companies, among which might be mentioned without being invidious, the names of the following firms: Messrs. Robinson, Howell & Co., tweeds; Clare Bros. & Co., stoves, furnaces and hollow ware; Guggisberg Bros. & Co., furniture of all kinds; P. E. Shantz, agricultural implements and machinery; Cherry Bros., high grade flours; W. D. Hepburn & Co., boots and shoes; Stahlschmidt & Co., school, office, lodge and church furniture.

All of these firms are attaining a more than Dominion reputation for the excellence of their different manufactures. Besides these there are two large breweries, three cigars factories, and different factories for the manufacture of each of the following, viz., knitted goods, gloves, linings, waved and serpentine mouldings, carriages, wagons, cigar boxes, and brushes; numerous stores and shops for the supply or repair of every article of luxury, comfort or necessity.

In addition to the town hall, two large public halls with stages, scenery and gas lighting supply every convenience for public entertainments and meetings. In the village are churches of various denominations; and numerous Societies are represented by their lodges, courts, encampments, etc.

The Public School employs five or six teachers, and in efficiency the Preston Public School is excelled by no village school in the country.

The Mechanics' Institute is in a flourishing condition, and besides apparatus of different kinds, possesses a carefully selected library of 4,300 volumes, while on the tables of the reading room are always



to be found a large number of first class magazines, journals, periodicals, illustrated and other newspapers. The town has also a well conducted newspaper,—the *Preston Progress*.

The Preston Artesian mineral springs and baths are regarded—and not without just reasons—by the inhabitants as a modern pool of Bethesda, hence it is almost unnecessary to say that its hundreds of visitors doubly endorse its home reputation. The difficulty as yet is to accommodate its numerous guests.

Now a last and important sentence tells of two things that Preston *has not got*, viz., neither a large debt nor high taxes.

CHATHAM, ONT.

The county town of the county of Kent is pleasantly situated on the river Thames, about midway between London & Windsor. The Grand Trunk and Erie & Huron Railways run through the town, and the Michigan Central, intersected by the Erie & Huron, passes about five miles away. The river is navigable for large sized steamers and vessels for a short instance above the town. A steamer plies daily between this Port and Windsor & Detroit.

It has agencies of four chartered banks and several private ones. All the fire, life, accident and marine insurance companies doing business in Canada are represented.

The county and other public buildings are handsome structures. There are seven public schools and the finest Collegiate Institute in Ontario. There are a number of woolen mills, foundries, agricultural implement works, saw mills, flour mills; (one mill alone having a capacity of three hundred barrels per day) planing mills and a number of other factories. The Chatham Mfg. Co. employs from 75 to 100 hands in the manufacture of wagons, which are shipped to points from one end of the Dominion to the other. A fruit and vegetable canning works has recently been established, employing a large number of hands. A very extensive export trade is done in grain, pork, beans, and other country produce, and in lumber, square timber, railroad ties, staves, cord wood, etc. The town is lighted by electricity. Population 9,500.

PORTAGE LA PRAIRIE.

Portage la Prairie, a town in the county of Portage la Prairie, Man., on the Canadian Pacific Railway, 56 miles from Winnipeg. It has, besides the county buildings, 5 churches, 2 flour mills, 1 saw

mill, 29 stores, 7 hotels, 1 private bank agency, 2 telegraph offices, and 2 printing offices issuing two weekly papers. It is surrounded by a fine farming country, with enough wood for actual settlement. Pop. 2,500.

INVERNESS, QUE.

The *chef-lieu* of the county of Megantic, 10 miles distant from Saint Julie station, G. T. R. It contains 6 stores, 3 churches, Court House and Registry office, a Good Templars' Hall, 2 Temperance Hotels, and a weekly newspaper. The Dunkin Act is rigidly enforced and no intoxicating liquors are sold anywhere in the Township. Population of Township 1,700.

VALLEYFIELD.

Valleyfield, in the Province of Quebec, county of Beauharnois, situated at the head of the Coteau Rapids and foot of Lake St. Francis. This town possesses a water power that may well excite the envy of neighboring towns and cities, and owing to the total absence of floods caused from backwater in many other places, a large proportion of future industries will be located there. The fall of water being 15 feet, coming from an expansion of the River St. Lawrence 35 by 5 miles, an idea may be formed of the power to be had. The present manufactories in operation are all flourishing. The Montreal Cotton Co's. mill employing 1000 hands,—the finest mill in Canada—woolen factory, two flouring mills, fitted up with the latest improved machinery, several saw mills, and sash and door factories, canning factories, etc. It has a system of water works unsurpassed in the Province, electric light, fine public buildings, 10 hotels, 60 stores, good churches and educational institutions. Is becoming a favorite summer resort for Americans as well as Canadians. The Canada Atlantic Railway passes through the town. The Grand Trunk Railway and Canadian Pacific Railway are looking toward constructing lines there in the near future. Population 6,500.

NEW-WESTMINSTER, B. C.

The City of New-Westminster, generally written simply "Westminster," is situated upon the right bank of the Fraser River, about 16 miles from the Gulf of Georgia. The river is now navigable to this point by vessels drawing over 20 feet of water, the depth of water in the shallowest part of the channel being 25½ feet



at spring tides. For three years the Dominion Government has been constructing works at the river mouth for the purpose of deepening the channel. It is expected these works will be completed this year (1889), when the depth of water will be sufficient to admit the largest class of vessels. During the past season 4 sea-going vessels have come to Westminster and taken away cargoes of lumber for foreign ports. The city has a population of between 5000 and 6000, and for some years has been growing very rapidly. By an act passed during the present session, the city boundaries have been extended east to the banks of the Brunette River, and west to include two islands. The value of buildings erected during the past three years is not much less than a million dollars, and during that time property has more than doubled in value. The assessable property is over $3,000,000, and at the next assessment is expected to be $5,000,000. The city stands nearly in the centre of the finest agricultural district in British Columbia, and has easy access by water and railway to all quarters. It has regular connection by steamer daily with Victoria, and semi-weekly with Nanaimo; and steamers run almost daily to the settlements up and down the river. It is the fresh water terminus of the Canadian Pacific Railway, and it will also be shortly the western terminus of the Northern Pacific Railway. The Southern Railway, which is to connect with the Northern Pacific at the U. S. boundary, is now in course of construction, and by agreement the work-shops and repair-shops are to be located at Westminster. A charter has also been granted for a railway from Westminster to Victoria, crossing the gulf by means of a railway ferry. This city has three large saw-mills now in operation, a woolen mill (the only one in the province), sash and door factories, two foundries, furniture factories, tannery, etc. It is nearly in the centre of the great salmon canning industry of the Fraser, which distributes every year nearly $500,000 in wages alone. In Westminster are situated the provincial penitentiary, the provincial lunatic asylum, the central prison, and the Dominion and provincial land offices. It is well supplied with public schools, and has six churches. It is the central station of the Pacific division of the C. P. R. telegraph system, and here that system connects with the Mackay-Bennett postal-telegraph system through the U.S. It is lighted with gas, and has a complete telephone system, which extends to Vancouver, 12 miles distant. Arrangements have been completed for the erection this year of a large new saw-mill with a capacity of

over 200,000 feet per day, and two other saw-mills are projected. As a point for investment, Westminster offers very great advantages, on account of its central position and its facilities for manufacturing and commerce. The climate is unsurpassed, and the situation attractive and healthy.

HALIFAX.

Halifax, the capital city of Nova-Scotia, and the chief naval station of the Dominion, stands in a fine position on the west side of Chebucto Bay, now better known as Halifax Harbor. It is distant from Montreal 850 miles, and from New-York 938 miles. It is not only the chief naval station, but it is the headquarters of the Imperial land forces in Canada, and contains the only garrison of British regular troops in the Dominion.

The city is situated on a peninsula, on the topmost height of which stands the Citadel which gives the place its picturesque and military character, and which forms a striking object when approaching the harbor from the sea. The undulating slopes on which the city stands give variety to its panoramic scenery, and the prospect presented to the eye is charming whether viewed from the city, the Citadel Hill, the Harbor, or the beautiful country around.



CITY OF HALIFAX SHOWING THE HARBOR.



Unlike most Canadian cities which took their rise from the merest hamlet built in the backwoods or on the prairie, Halifax had its beginning in a colonization scheme, under Col. Edward Cornwallis, its first Governor, who in 1749 landed in Chebucto Bay with 3000 settlers, composed chiefly of retired army officers and their families. In a single season the town was laid out and fortified, and within a year a public market was established and the foundations laid of the fisheries which have since made Halifax famous among the Atlantic ports. In 1752, only three years after the colony was founded, there appeared the Halifax *Gazette*, the first newspaper printed in Canada.

From its formation Halifax was eminently a military town. After the formation of its dockyards in 1759 it became an important *rendezvous* for English ships of war, while many military men whose names have become famous in history have been quartered in its barracks. "Princes, dukes, lords, admirals and generals walked its streets; guns boomed, flags waved and drums beat, and the pride and panoply of war were ever before the people. Thus it remains to-day; the uniform is seen on every street, and fortifications meet the eye at every prominent point." The naval yards are extensive, and this port is the chief station of the North American and West Indian Squadrons of the Royal Navy. The dockyards are not open to the public; but visitors are admitted by card.

The growth of Halifax, though not as rapid as some cities of Canada, has been steady and substantial, and free from the speculation that brings financial disaster to many cities. During 1888 over $730,000 was expended in new buildings and city improvements, and the present population is about 45,000.

The city and suburbs contain 38 churches and chapels. Its religious history is not without interest, as it is the seat of the oldest Anglican bishopric, the "Diocese of Nova-Scotia and Prince Edward Island," having been erected in 1787. It is also the seat of the Roman Catholic bishopric of Halifax, and the Presbyterian church has its Theological Hall here.

Its educational institutions are important, and comprise Dalhousie University and College, with its various high schools, ladies' colleges, schools for the blind, the deaf and dumb, etc., but these will be found more fully described in the general description of Nova-Scotia. A new institution is a school of art and design, affording free education in the industrial arts. There is a large legisla-

tive library, a citizens' free library and a Y. M. C. A. library, with which is associated an excellent reading room. The press is well represented by five daily newspapers, four weekly papers, and several other publications.

The city has some fine public buildings, among which are the Provincial Parliament buildings including the Government offices, Provincial museum, Government House, Post Office and Custom House, Shipping and Registry offices, Court Houses, etc. The new



HALIFAX POST OFFICE AND CUSTOM HOUSE.



City Hall which was finished in 1888 is a handsome structure 145 x 71 ft., four stories high, and having a tower of 110 ft.: It is built of Pictou free stone, red and gray, with basement of Nova-Scotia granite. Its cost was about $70,000. Halifax has nine banks and a corresponding number of insurance and other commercial corporations; and its business interests are looked after by a Chamber of Commerce and a Board of Trade.

Besides many places of public amusement, Halifax is noted for its public gardens and pretty suburban resorts. The Public Gardens are justly considered among the most beautiful on the American continent—not excepting those of the greatest cities in the United States. The situation is choice, and they are laid out with charming walks and sylvan lakes, stocked with swans, and several fine specimens of statuary decorate the grounds. The Military Prison on Melville Island and The Dingle in Northwest Arm, which is acessible by land, are interesting resorts, and The Dutch Village, Chain Lakes and MacNab's Island (each within three miles from the city), Bedford (8 miles), Cow Bay (11 miles), where the Waverly gold mines lie, and Prince's Lodge (4 miles), commonly known as Montagu gold mines, all places which would attract the tourist. St. Paul's Cemetery and Camp Hill Cemetery are places not devoid of interest for the sightseer. Point Pleasant Park, containing many delightful walks and drives, may be reached by street cars. The park property belongs to the Imperial Government, but is leased by the City for an indefinite period at the nominal rent of one shilling. All the roadways leading to the park are closed once a year for a full day to maintain ownership. The roads originally made by the Military are kept in capital order. It contains a number of old forts and the Prince of Wales Tower.

The harbor and neighboring waters afford excellent scope for yachting, rowing and bathing, and there is abundance of fish and wild fowl to satisfy the desires of the sportsman. Winter sports are well represented by tobogganing, snow-shoe, skating and curling clubs.

Halifax Harbor is rich in historic incidents. It was to this port that in 1746 the great French Armada, consisting of 13 line of battle ships, 27 frigates and 30 transports, set sail to "occupy Louisburg, reduce Nova-Scotia, destroy Boston, and ravage the coast of New-England," but which like its Spanish predecessor was shattered by storms till only two ships and a few transports reached the



port. It was from Halifax that the British fleet set out, which reduced the powerful fortress of Louisburg and broke the power of the French on these coasts. It was into Halifax that one Sunday morning, as the church bells were ringing, the Shannon brought the American frigate Chesapeake as a prize of war, with a Halifax lad elevated by the fortune of war to the chief command of the victorious frigate ; and many other interesting events of military history centre in and around Halifax.

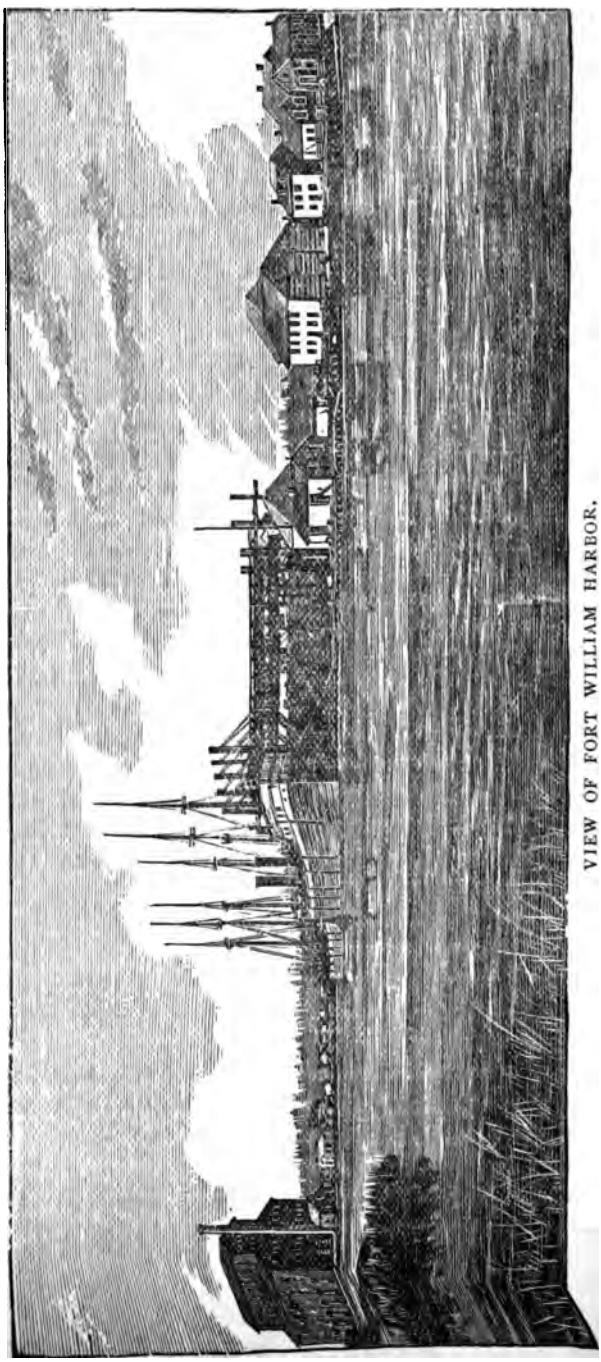
No finer harbor exists on the Atlantic. Its waters are remarkably deep, the anchorage good, the entrance naturally protected by MacNab's Island, while at its head the beautiful Bedford Basin with its 20 square miles of anchorage provides shelter for a nation's navy. With such natural advantages the sea-port trade of Halifax has steadily grown. The combined sea and coastwise entries inward in 1888 numbered 4,017 vessels of about 840,000 tons, while the entries outward were 4,140 vessels of about the same tonnage. In one day in this year the vessel arrivals numbered 70, mostly laden with provincial produce. The showing is probably not exceeded by any port in America, with the exception of New-York and probably Boston. Halifax is a free port, no charges being made for dockage. The present year will see completed the new dry dock, which ranks among the best in the world. Halifax maintains a large and ever increasing trade with Newfoundland, with which it has a direct line of steamers. It has also secured direct steamship communication with Prince Edward Island and Cape Breton on the north, and with Boston and other American ports on the south. A monthly steamship service exists between Halifax and Bermuda, Jamaica and Cuba, and it is expected that service will be extended to other West Indian islands.

FORT WILLIAM.

Fort William is situated in a beautiful valley at the foot of Mount McKay, near the mouth of the Kaministiquia, Thunder Bay, Lake Superior, Ont.

It is the Golden Gateway for the Canadian North West and the terminal point on the Great Lakes for the Canadian Pacific Railway, and on the banks of this river the first sod of this wonderful work was turned in 1875.

Here the great transcontinental line from the Pacific first touches the Atlantic water route.



VIEW OF FORT WILLIAM HARBOR.



It occupies a central position in the rich silver mining section of Thunder Bay, and is the most direct and convenient place to receive and distribute supplies and machinery, and the best outlet for the ores from the extensive gold, iron and other metal-bearing formations lying between it and Manitoba.

It is also backed by large tracts of good farming lands, both in the Kaministiquia and Whitefish Valleys, where already many farmers are settled and prosperous.

For manufacturing, shipping and railway purposes Fort William is favored with unsurpassed natural advantages.

As a harbor at the head of Canadian lake navigation and the grounds required for the railway traffic, the Kaministiquia and its banks seem to have been made for the very purpose, with the mouth of the river completely sheltered from every unfavorable wind.

Inside it is from 300 to 400 feet wide, and with the exception of two or three shallower spots is from 15 to 25 feet deep for four miles, subject to no shifting sand bars, as the bed is stiff clay. And being the outlet of lakes not far inland is never troubled with floods in the heaviest rainfalls.

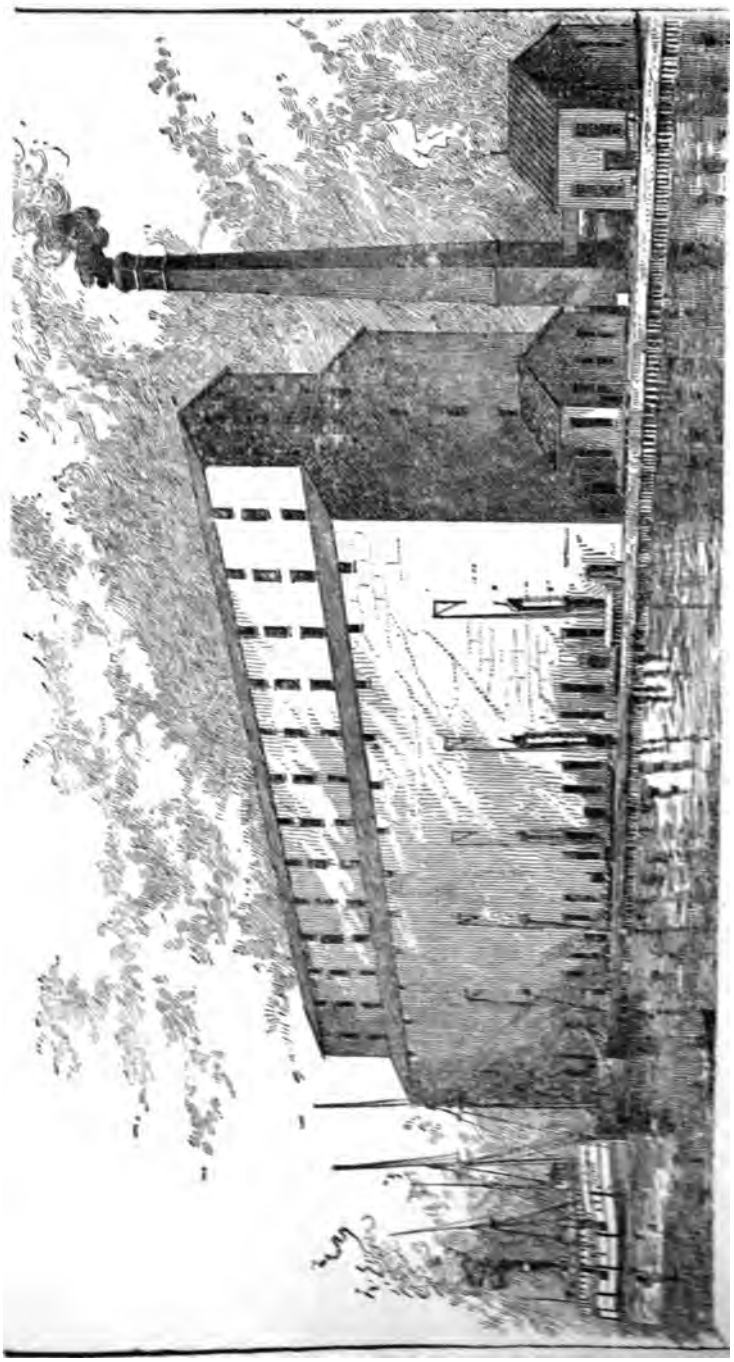
It empties by three branches into the bay, each about two miles long, and with some improvements all can be made available for heavy shipping.

More than a century ago Fort William was chosen by the great Fur Trading Company as their headquarters, and from this pos- the fleets of canoes were sent inland, all over, even to the McKenzie River, with supplies, and returned laden with the rich furs that afterwards adorned the heads and shoulders of many of the fair daughters of Europe.

But a change has come over the placid waters of the Kaministiquia since the palmy days of the fur traders. A far different trade and commerce are now on the warpath seizing the best channels.

In 1868 the Steamer "Algoma" alone made two trips a month from Collingwood to Fort William, in 1878 five boats were on this route: one from Collingwood, one from Owen Sound, and three from Sarnia. In 1888 145 vessels delivered 94,239 tons of freight on the docks at Fort William, valued at $231,808.00, and the duty collected was $51,822.00, and the grain shipped in the same time was about seven million bushels, the vessels employing about 1300 seamen.

The Canadian Pacific Railway Company have already built two mammoth elevators on the river, with a capacity of 2,700,000 bush





els and laid the foundations for a third one to hold about a million and a half more. They have also very extensive coal docks and patent derricks with a good stone roundhouse and repair shops.

The population now is about 2,000, settled along the north side of the river for about three miles with substantial dwellings and stores, well fitted to suit such a population, five churches and two good schoolhouses. There is also a Jesuit Indian Mission on the south side of the river with church, nunnery and schoolhouses.

The site for the large city that is sure to grow here is all that could be desired, a wide tract of sandy loam rising gradually back, offering easy drainage and cheap construction of streets, and it must be healthy, as the sand absorbs all impurities.

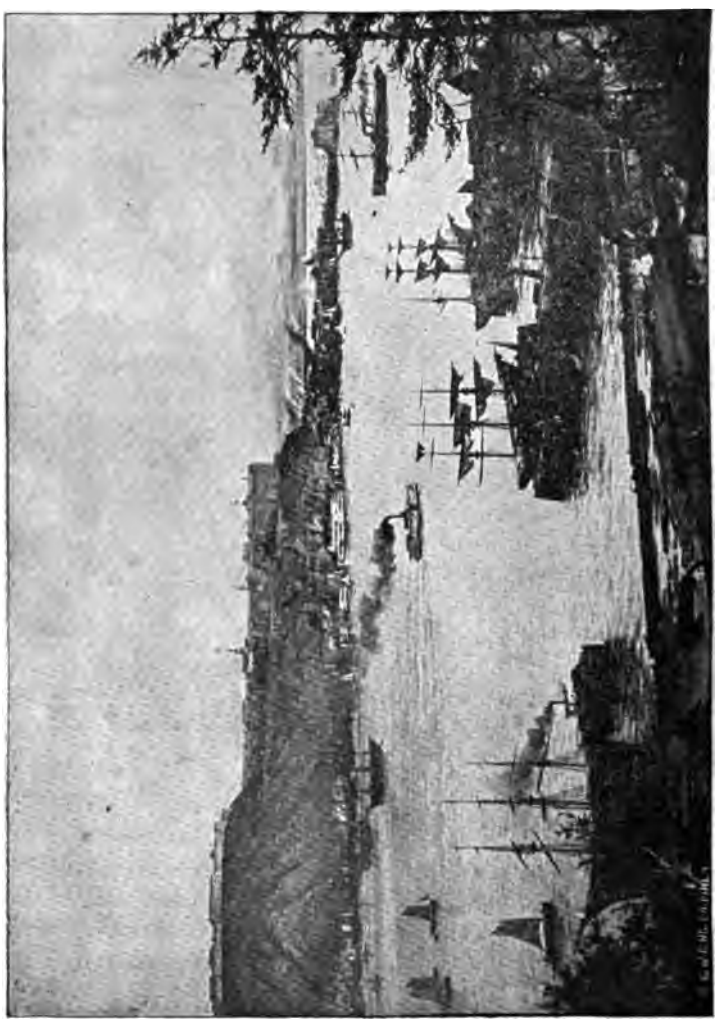
And while the lower portion of the river is one immense natural dock, the upper reaches are grand in scenery, with one of the most beautiful Falls in the world, providing an unlimited water power which will certainly be utilized in the near future.

As to the climate, the summers are very enjoyable, some winters are pretty severe, but the atmosphere is always dry and bracing, in other winters the atmosphere is very fine. It may be mentioned as an instance that there was no snow at Fort William on January 1st, 1889, and a large party of ladies and gentlemen played lawn tennis all day here.

Fort William then, with its position and natural advantages, is unrivaled on the whole line of the Canadian Pacific Railway from Montreal to Vancouver.

QUEBEC.

In the grandeur of its site and surroundings, in the strength of its fortifications, in the extent and romance of its history, and in the hospitality and kindness of its citizens, Quebec stands unique among the cities of America; and no visitor from Europe or from the United States can be said to have seen Canada—or indeed, this continent—who has not seen this old capital of New France. It is truly said that the sail up the St. Lawrence to Quebec is alone worth a voyage to Canada to experience. "Whatever jealousies may exis- among the cities of the Dominion," says Mr. Dawson in his "Handbook of Canada," "all Canadians are proud of Quebec." Six times have the walls of Quebec been assailed by armies, and here fell military heroes of three different nations. Every acre of ground about Quebec teems with history. It was here that the intrepid

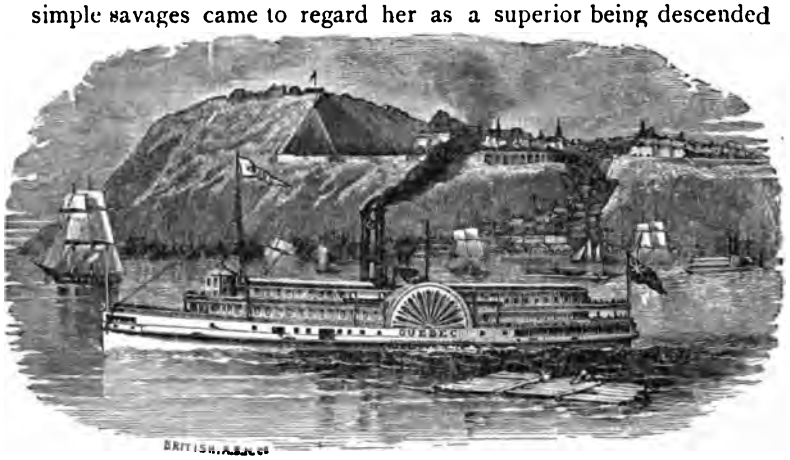


QUEBEC, FROM POINT LEVIS

voyager Jacques Cartier, the discoverer of Canada, landed over 350 years ago (1534-5), and visited the Indian chief Donnacona, who, from his village of Stadacona, standing where now rises the city of Quebec, received the first white man with a friendly welcome. On his second voyage in 1535 he moored his vessels in the mouth of the St. Charles, near where the Dorchester Bridge now stands, and built huts on the bank in which to spend the winter. Being unac-

quainted with the climate, he passed a miserable winter, and in the spring repaid Donnacona's hospitality by carrying him off as a captive to France. History tells how the chief died from grief at his detention, and of the distrust of the whites occasioned among his followers by his capture.

The real founder of Quebec, however, was Samuel de Champlain, a man of great courage and high moral quality. Associated with him was a young wife, whose name has been handed down as one of the heroines of Canada. It was a happy augury that the first white lady who set foot in Canada should be one of such winsome manners and pure character, and those who read her story will learn with pleasure that her name is still commemorated in St. Helen's Island, opposite Montreal. She visited the wigwams of the Indians and attended to their spiritual as well as temporal wants, until the simple savages came to regard her as a superior being descended



VIEW OF QUEBEC.

upon them from another world. Years after the death of her brave husband, she, having returned to France, founded a convent of Ursuline Nuns at Meaux, and there died. Champlain had been sent out by a company of noblemen of France, to open up trade with the Indians, but no less to open up a new field for the Christian religion ; and it may be said that the religious idea was the main one in the founding of Canada. Hence the early establishment of those numerous religious institutions which are a striking feature of Quebec and other towns in the province. The career of Champlain is the history of Canada during his life, but of him more will be found

in other parts of this work. In 1629, twenty-one years after Champlain had built the town, Sir David Kirke appeared up the river with his fleet, compelled its surrender, and Champlain and his followers were taken to England as prisoners. The place was restored by the treaty of St. Germain, and Champlain returned as Governor of the colony. Again in 1690, when the proud Frontenac ruled, an English fleet under Sir William Phipps appeared before Quebec, and summoned it to surrender, but Frontenac answered with defiance, and the fleet retired baffled.

In 1711 a combined land and sea expedition was sent against Quebec by the English but failed, the fleet being almost destroyed by a storm, with the loss of 800 lives. It was in commemoration of these two deliverances, which the inhabitants regarded as providential, that the little church in the lower town was named Notre Dame des Victoires. Again in 1759 an English fleet sailed up the St. Lawrence against the city, and the capture of the wonderful stronghold was the most important event in that long struggle which left the English the paramount power on the continent. How Wolfe, arriving from Louisburg in July, landed and attacked Montcalm at Beauport east of the City; how Montcalm bravely withstood the assault, and drove him back to his ships with great slaughter; how, after two months of manœuvring and preparation, the English floated up past the city during the night, and having learned the countersign from two deserters, effected a landing at a place now known as Wolfe's Cove; how the troops silently scaled the steep height, and by morning were drawn up on the Plains of Abraham, to the number of 8,000; how Montcalm, disdaining to seek shelter behind his impregnable defenses, marched out to meet Wolfe in the open field, and how both fell upon the battle plain, are outlines in a story that makes the most glorious page in the history of the cities of this continent. A more courageous General than Wolfe never won a battle; a more brave and chivalrous General than Montcalm never suffered the adverse tide of war. It was an admirable feeling in the descendants of both parties to this conflict that led them to erect a single monument to both Generals. This monument stands in the Governor's Garden, and bears on one side the name "Wolfe," on the other "Montcalm," with a Latin inscription of which this is a translation:

> Valor gave a united death,
> History, a united fame;
> Posterity, a united monument.



Only once since this period has Quebec been the scene of war, and that was in 1775, when the American Generals Montgomery and Arnold laid siege to it. The Americans gained the heights by Wolfe's Cove, and advanced by St. Roch into St. Charles and Sault-au-Matelot, sts. where they were attacked and dislodged, Montgomery being killed and Arnold wounded. The house to which Montgomery's body was taken is still shown as an Indian Curiosity shop on St. Louis st.

But it is not alone in war that Quebec has a history full of interest—the history of the Indians in their connection with the French population, of the fur traders, of the pioneers, of missionary work, and of the settlers—all have their romances centering in and around Quebec. Interesting as these are, it is not possible to give even an outline of them, and we can only leave the visitor to consult the histories, romances and brochures that treat upon the subject.

As may be expected, the numerous religious and other institutions of Quebec are rich in historic associations, and many of them are the oldest of their kind on the continent.

The French Cathedral, which was some years ago raised to the rank of Basilica minor, the only church of that dignity in America, was consecrated in 1666, by Monseigneur de Laval, who was the first bishop of Canada. The exterior is peculiar in style, and the church and surroundings remind one of some old town in Normandy. The part of the church in the rear of the altar rails is a copy of St. Peter's at Rome. The edifice contains a number of fine paintings, among which is a St. Paul by Carlo Maratti, and a figure of Christ by Vandyck.

The Seminary and Chapel, and Laval University were also founded by Mgr. de Laval, a man who left many traces upon the religious history of the province. "Born of the noble family of Montmorency, he had all the vigor, all the courage, and a full proportion of the pride which belonged to his lineage. He arrived in Quebec in 1658, and assumed, with no faltering grasp, the reins of ecclesiastica power. He divided the country into regular parishes; he founded in 1663 the Seminary of Quebec, the Grand Seminary for the training of the clergy of his diocese, and the Little Seminary for general education. To this institution he devoted all his own wealth, and after thirty years' labor retired to spend within its walls the remainder of his life." It was not till 1852, that the ultimate design of its founder was realized, and the Seminary was erected into the Laval

University. The building, which is 297 feet long and five stories high, with a wing 265 feet long, stands out boldly in the fore-front of the upper town, presenting an imposing appearance as viewed from the water below. It has a costly library of 77,000 volumes, with elaborate apparatus, lecture rooms, etc. It has an interesting museum of natural history, geology, botany and arts, containing many thousand specimens ; a valuable collection of historical documents ; and a large and increasing picture gallery. There are four faculties in this University, theology, law, medicine and art. It has 34 professors and 300 students, and fourteen colleges and four grand seminaries are affiliated with it. The Grand Seminary, which was



ST. LOUIS GATE.

founded in 1663, was twice destroyed by fire early in the eighteenth century, and in 1759 was almost demolished in the siege of Quebec by Wolfe. This institution has about 600 pupils in general education, instructed by over forty professors. "Passing through the interminable corridors," says Holiwell's "Guide to Quebec," "the lower of which is partly underground and lighted by barred windows, one becomes bewildered and might lose himself in the endless turnings and descents. One may easily imagine himself in the dim periods of the middle ages, and the illusion is heightened by the sombre figures of robed priests pacing up and down the vast galleries."



The first of the Jesuit fathers who braved the dangers of the wilderness, and carried, through suffering and privation, the doctrine of their church to the Indians beside the Great Lakes, along the Mississippi, and even into the North-West, sent home to France annual reports of their work. These reports, now known as the "Jesuit Relations," inflamed the zeal of many a pious Frenchman and Frenchwoman, and among these were a devout lady, Madame de la Peltrie, who, devoting her whole fortune to the work, set sail with three Ursuline nuns in 1639, and in the midst of many hardships founded the Ursuline convent, which now covers seven acres of ground, has 80 professed sisters and 500 pupils. The work started by Madame de la Peltrie was carried on by Marie de l'Incarnation, a remarkable woman, called by Bossuet the "St. Theresa of the new world." Twice the convent was burned to the ground, famine and pestilence ravaged the colonists and Indians, while the native children were indifferent or contentious. But this noble woman's zeal never failed, and her courage was sustained by supernatural visions. In one of these visions, it is related that "while praying before the sacrament at Tours, before she had entered on her work, the whole land of Canada was shown her, rugged with the primeval forest, and the memory of the heavenly voice which sent her on her mission supported her under all her trials." Thus was founded the Ursuline convent of Quebec, the parent of the convent at Three-Rivers, and of the convent at Boston which was destroyed by a fanatical mob in 1834. It was to the chapel of this Quebec convent that Montcalm was carried wounded off the battle-field, and here his remains lie.

In the same vessel which brought Madame de la Peltrie in 1639, there came three nuns from Dieppe, sent out by the Duchess d'Aiguillon, niece of Cardinal Richelieu, who founded in Quebec the Hotel Dieu, a large institution devoted to the relief of the sick poor. Some fine paintings adorn these walls.

The Anglican Cathedral, which occupies a part of the site of the old Recollet Monastery, was erected, in 1804, at the expense of the English government. It has many old flags and other military trophies. In this church was buried the Duke of Richmond, Governor-General of Canada, who died from the bite of a tame fox. The communion service, altar cloth and service books are the gift of George III.

Such are a few of many public institutions in Quebec, having a history worthy of note.

The facts on which the novel of the "Chien d'Or" was founded are thus related by Mr. Dawson: "The former Quebec Post Office was a house—which, in those days, might almost be called a palace—occupied in the year 1748 by an eminent merchant, Mons. Philibert. He had quarrelled with the notorious Intendant Bigot, the second man in New France, who was then in the full tide of that peculation and insolence which sapped the power of France in the new as well as the old world. To express his hatred, Philibert had this rough sculpture placed over his door, with the legend in old French :—

Je Suis Vn Chien Qvi Ronge L'os,
En le rongeant je prends mon repos,
Vn temps viendra qvi n'est pas venv,
Qve je morderay qvi m'avra mordv.*



PALACE GATE.

Bigot, in return, quartered troops upon him. An insult from Sieur de Repentigny, the officer in command of the soldiers quartered in

* The following is the translation given by a local rhymster :—

I am a dog who gnaws his bone,
I sit and gnaw it all alone,
The time is coming, but is not yet,
When I'll bite him by whom I'm bit.



his house, was resented with a blow by Philibert. The officer drew his sword and ran the merchant through the body. He then fled from Quebec and took refuge in Acadia. The influence of Bigot soon procured letters of pardon from Louis XV. Repentigny returned to Quebec, registered his letters, and satisfied the widow with a money compensation. His promotion soon followed, and the murder of the merchant was forgotten by all, save by a son of Philibert, a lad of 11, quiet and reserved, and of brooding and austere habits. Arrived at manhood, young Philibert left Quebec for France. A few months after his departure his mother received from India a letter "My dearest mother; we are avenged; my father's murderer is no more." The vengeance of the son had overtaken the murderer in the streets of Pondicherry, in the East Indies.

This same Chien d'Or (Golden Dog) could tell many other strange stories if it could speak. Miles Prentice, a sergeant who had come out under Wolfe, opened in this building a restaurant, and here Prentice's pretty niece, Miss Simpson, was met by Lord Nelson, then only a captain in command of the warship *Albermarle*. Nelson fell in love with Miss Simpson, and when his ship sailed he clandestinely returned to marry her. His design was frustrated, however, by his friend Alexander Davidson, a city merchant, who much against Captain Nelson's will, got the boat's crew and took him back aboard his vessel. The question might be asked, had he captured the pretty Canadian girl would he have won the battle of Trafalgar? Probably not, for it is said he had it in mind to settle in Canada after his intended marriage.

The fortifications of Quebec, which are the strongest in the world, excepting Gibraltar alone, are among the sights of most interest to visitors here. The works were planned in 1720 by M. de Lery, the outlines being much as they exist to-day. They were repaired on the accession of English power in 1759, and again in 1775 to resist the siege of the Americans. Important additions have been made since, the Citadel being erected in 1823. From this time to Confederation a regular infantry regiment besides artillery and engineers was always quartered here, but the Citadel is now occupied by a small body of Dominion troops. The Citadel stands upon a promontory, 350 feet above the river, the face of the promontory being an almost perpendicular wall of rock. The fortress is provided with a complete system of barracks, storehouses, magazines, etc. Some of the old gates built in the early days of Quebec have been taken down

and new structures erected, and thus many precious landmarks have been destroyed. Two of these gates are here illustrated. The St. Louis gate, which replaced an historic structure, leads out into the Grande Allée, on which are situated the new Houses of Parliament. It was from the Palace Gate that the sally of the garrison was made in 1775, when Arnold's men were taken in the rear, as they were assaulting one of the barriers of the lower town. The corner-stone of the Kent Gate, named after Queen Victoria's father, was laid by the Princess Louise.

On the edge of the cliff on which the fortress is built and extending from below the Citadel, is a wide terrace 1420 feet long, used now as a promenade for visitors. Here the military band plays in the summer, and the view from here—whether by night, when the myriad lights of the city beneath the feet, the ships' lights and those of Levis on the opposite shore, seem to duplicate the stars above; or by day, when the vast spectacle of city, and shipping, and far reaching river, of wide sweeping plain, and blue mountain feeds the eye with endless variety—is such as no city in the world can present.

It is not alone for its own varied beauties that Quebec attracts the visitors; but its environs are many and possessed of striking attractions. The Falls of Montmorency, of whom many a poet and novelist has written, pour down their creamy foam in a lovely glen only a few miles off; the Falls of Lorette, by which live the remnant of the once powerful tribe of Huron Indians, and the Chaudiere Falls, as well as many a pretty inland lake can easily be reached from the city. Those who wish to study human nature in its various phases will find in a visit to the simple, kindly and hospitable habitants in the inland settlements much to please and instruct.

Among the recent public buildings of note are the provincial Parliament Houses and the new Court Houses. The Parliament buildings contain the departmental offices, and are an extensive block of buildings built on one of the most commanding sites in the city. They contain a library of 30,000 volumes.

The new Court House is a very fine building, of the style of architecture of the historical palaces on the Loire in France.

The new City Hall is a fine structure about to be built on the site of the old Jesuits Barracks, and is to contain the city council chamber and city offices with the public records, and the fire and police stations.



In conclusion we may quote what Dickens, among the many writers who have treated the subject, says of Quebec :—

"The impression made upon the visitor by this Gibraltar of America; its giddy heights; its Citadel suspended, as it were, in the air; its picturesque, steep streets, and frowning gateways; and the splendid views which burst upon the eye at every turn: is at once unique and lasting. It is a place not to be forgotten or mixed up in the mind with other places, or altered for a moment in the crowd of scenes a traveler can recall. Apart from the realities of this most picturesque city, there are associations clustering about it which would make a desert rich in interest. The dangerous precipice along whose rocky front Wolfe and his brave companions climbed to glory; the Plains of Abraham, where he received his mortal wound and died at the spot marked by a pillar; the fortress so chivalrously defended by Montcalm; and his soldier's grave dug for him while yet alive, by the bursting of a shell, are not the least among them, or among the gallant incidents of history. That is a noble monument too, and worthy of two great nations, which perpetuates the memory of both brave Generals, and on which their names are jointly written.

The city is rich in public institutions, and in Catholic churches and charities, but it is mainly in the prospect from the site of the old Government House, and from the Citadel, that its surpassing beauty lies. The exquisite expanse of country, rich in field and forest, mountain-height and water, which lies stretched out before the view, with miles of Canadian villages glancing in long white streaks, like veins along the landscape, the motley crowd of gables, roofs and chimney tops, in the old hilly town immediately at hand; the beautiful St. Lawrence, sparkling and flashing in the sunlight; and the tiny ships below the rock from which you gaze, whose distant rigging looks like spider's webs against the light, while casks and barrels on their decks dwindle into toys, and busy mariners become so many puppets: all this framed by a sunken window in the fortress, and looked at from the shadowed room within, forms one of the brightest and most enchanting pictures that the eye can rest upon."

The trade of Quebec is extensive, and in respect of the sea-going sailing vessels which arrive and depart it still leads the Dominion. The total foreign trade of the port for the year ending Dec., 1888, amounted to $9,313,352. Of this $5,597,289 were exports, and of those exports $4,930,108 were products of the forest. The shipments to Great Britain amounted to $4,938,946 and to the United States



$378,041. Of recent years the manufactures of Quebec have developed steadily and with prospects of great expansion, especially in the leather trades. There are 25 manufactures in the boot and shoe trades, and 22 tanneries reported in the Quebec city directory, and this industry is of larger dimension here than in any city in Canada except Montreal. The city, owing to its abundance of cheap and efficient labor, offers excellent facilities for manufactures; and it may be noted that taxation is lighter in Quebec than in any large city in Canada.

The engraving on page 67 show a view from the citadel of Quebec, from a drawing by the Princess Louise, and that on page 69 shows a view of Wolfe's cove from the same royal pencil. For the cuts of the Palace gate and St. Louis gate, we are indebted to Messrs. Dawson & Co., booksellers, Quebec.

PORT ELGIN.

A shipping port on Lake Huron, and on the Wellington, Grey & Bruce section of the Grand Trunk Ry., noted for its produce markets, extensive manufactures, and mineral baths. Its celebrated mineral waters and its charming situation on the lake combine to make it a favorite resort for tourists. It has seven brick churches, good schools, two large tanneries, roller, flouring and woolen mills, several large factories, numerous industries and mercantile establishments, six large hotels, two banks. It is specially favored with transit facilities, having besides its railway connections a fine port which gives water connection with the great West. Population 2,500.

It is about 140 miles from Toronto, and about 120 miles from Hamilton. It has two newspapers, and telegraph and telephone connection.

COATICOOK.

Coaticook, one of the most flourishing towns in the Eastern Townships of Quebec, is situated in the eastern central part of Stanstead County, and is the principal town in that county. Its situation and surroundings are remarkable, both from a scenic and business point of view. Nestling among the hills which form a feature of Stanstead County, and occupying both banks of the Coaticook River, the view of the town from the Grand Trunk Ry., or from the summit of the hills, is strikingly picturesque, and the stranger walking down



the river finds some new scenes of beauty at every turn. From the bluffs near the town the Owl's Head Mountain, the blue peaks of the Green Mountains, and the rich, undulating slopes of Stanstead and surrounding counties present a spectacle richly worth a special visit to the vicinity. To the eye of the business man Coaticook possesses attractions as strong as those of its scenery to the tourist, health-seeker or artist, for the numerous cascades of the river afford a vast water-power to run the factories that may be added to the present manufacturing concerns. A saw mill built about 1840, by Richard Baldwin, one of the pioneers of the county, and a store started in 1842 by H. Cutting, were the beginnings of Coaticook, but the opening of the Grand Trunk through here in 1853 brought the village into existence. It became incorporated as a village in 1864, and in 1876 had a population of 1,100.

Its growth since then has been more rapid through the development of its manufactories, and in 1885 it received its incorporation as a town under special charter. It has now reached a population of 4,000, and is steadily growing in wealth and numbers—a growth based on its situation as the centre of a rich farming country, as well as upon its advantages as a manufacturing town. Coaticook has, among other industries, a large cotton mill, two knitting mills, a woolen mill, a mohair braid factory, three furniture factories, two sash and door factories, three saw mills, a large wood and iron working factory, an agricultural implement factory, grist mills, etc. Large quantities of oats, hay and barley are shipped from here to the United States, and the district has a large timber trade, while its reputation as a dairy country is well known. Its position, only ten miles from the Vermont border, is likely to make it a large exporting centre in the future. It is a port of entry, and its trade in 1887 amounted to $1,868,846, of which $1,670,556 were exports to the United States. Its educational facilities are excellent, it being the seat of two Grade or High Schools (one English and one French, ranking among the best of the Province), a convent, and other institutions. Among its public buildings recently erected, are a new catholic church, considered one of the finest in the Eastern Townships, and a new town hall, containing the courts, the registry office and fire station. A handsome post office and custom house building is also being finished at a cost of $25,000. A beautiful public park of six acres is laid out; and the town possesses a public market, several Protestant churches, as well as a fine exhibition building

for the fairs of the Stanstead and Compton counties Agricultural Association. It has also a system of water works supplied from pure springs flowing from the neighboring hills. Coaticook has two systems of telephones connecting with outside places, and it is proposed to extend the railway facilities by constructing a line to connect with the projected road from Ayer's Flats to Magog, and eventually to carry it through to Hereford, thus giving railway connection north, east, south and west.

TORONTO.

Toronto, the capital of Ontario, familiarly known as the "Queen City" of Canada, was founded in 1794 by Governor Simcoe, under the name of York. Three years after its founding, parliament buildings having been erected, the Legislature assembled there for



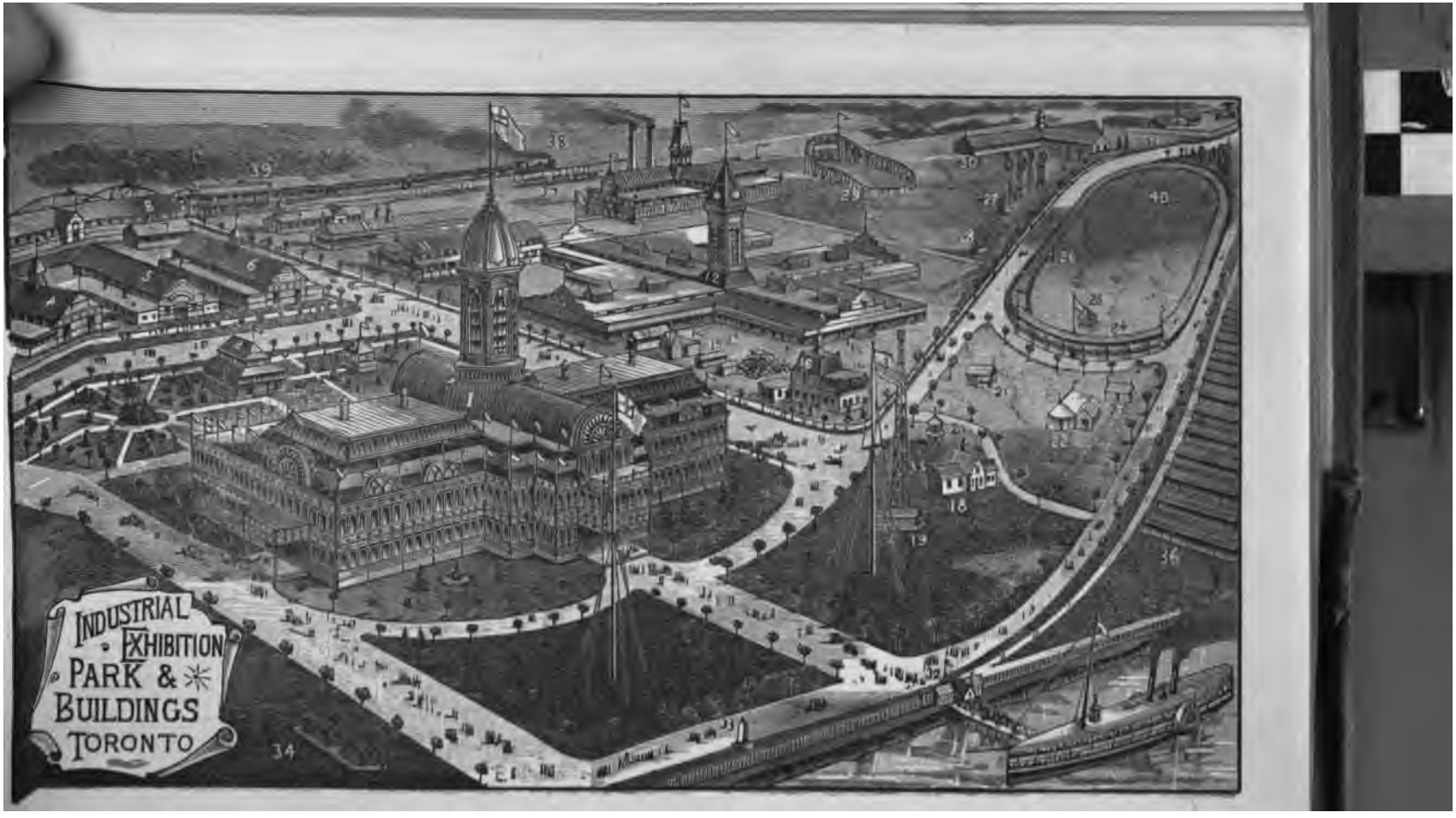
VIEW OF TORONTO, SHOWING ST. JAMES CATHEDRAL, KING ST. & UNIVERSITY BUILDINGS.

the first time. In the war of 1812–15, York was the scene of a conflict in which the Americans captured and held the fort and town for a few days. From the close of this war the progress of York may be dated. In 1834 it was incorporated as a city, and its name changed to Toronto. The population was then less than 10,000,



NEW BOARD OF TRADE BUILDING, TORONTO.

the census of 1881 showed 86,415, while the municipal census on the first Jan., 1889, showed the population of the city to be 166,040 exclusive of Parkdale (5,583), which now forms part of the city.


INDUSTRIAL
EXHIBITION
PARK &
BUILDINGS
TORONTO



The total population including all the suburbs is estimated at 180,000. In 1871 the assessed value of city property was $29,277,135, and in 1889 it was $113,063,075. The value of new buildings erected in 1888 was $2,000,000. The city now covers an area of sixteen square miles, has 195 miles of streets and 143 miles of sewers, of which 16½ miles of streets and 22 miles of sewers were laid in 1888. Situated on the north-western shore of Lake Ontario and commercially speaking in the centre of the province, its position makes it naturally a centre of trade by land and water. Six lines of railway converge upon it. Toronto has a university, several colleges, a normal and model school, and thirty-six public and ten Roman Catholic separate schools. These are more particularly described in the account of the educational system of the province. Osgoode Hall contains all the superior courts and chief legal institutions of the province. Toronto has six daily and about fifty weekly and monthly journals ; while the amount of general mail matter sent out from its post office is the largest of any city in Canada. The city has about 70 churches, and is at once the religious, educational and literary centre of the province, and in some respects of the Dominion.

TORONTO INDUSTRIAL EXHIBITION.

The Toronto Industrial Exhibition, or as it is now commonly called, "Canada's Great Fair," is one of the peculiar institutions of Toronto, and is the only permanent annual exhibition on the American continent. Although not so called in name, it is in effect the national exhibition of Canada, a position it has obtained by a thorough system of management, and by having the united support of the patriotic people of the city. During the last nine years, over $300,000 have been expended in erecting new buildings and enlarging the grounds ; but the accommodation is still insufficient, though in 1887 the amount spent was nearly $40,000. In 1879 the expenditure on prizes at this fair was $17,407, and in 1887 it was $26,000. In the first named year the receipts from admission fees were $26,960, and in 1888 they were $60,000, the total attendance being about 250,000 people. On the "farmers' day" last year, nearly 60,000 people passed through the gates. The total number of entries of exhibits in 1887 were 14,680. The exhibition grounds cover an area of 62 acres.

The fair has proved a success, not only from a popular but from a financial point of view, as the association now has a surplus above



all liabilities of $98,332. The exhibits come from all parts of the Dominion, and many every year from foreign countries. Of this exhibition the *.. o Farme* observed that "It is about the best managed of any in America;" and the *Fair and Stock Show Journal* of the same State said: "The Toronto Exhibition is one of the greatest, if not the grea.est, held on the continent; no other, except perhaps St. Louis, ranking above it for attendance," such being samples of the remarks of leading American agricultural journals. The exhibition is conducted by an incorporated association, in which the Toronto Board of Trade and the Canadian Manufacturers' Association have a special representation. The organizing manager of the exhibition is Mr. H. J. Hill, whose offices are in the Public Library building.

BERLIN.

Berlin, the county town of Waterloo Co., Ont., is situated near the Grand River, with a station on the Grand Trunk Railway, and with branches of the same railway running to Galt and Waterloo. A survey has been made for the Berlin, C. P. R., Junction to run here from Galt, and it is expected that this road will be built in 1890 when additional railway facilities will thus be acquired. Berlin has 13 churches, two bank agencies, two telegraph offices and telephone exchange, 8 newspapers including daily, a model school with ten teachers, a high school, a Roman Catholic college with public schools Its manufactures are extensive and rapidly growing. Among these are four furniture factories, two button factories, three shoe factories, two large tanneries,a shirt and collar factory, valise and trunk factory, carriage fa tory, foundries, etc. The town has a complete system of waterworks, electric light and gas, and is growing rapidly. In 1887, as reported by the Berlin Board of Trade, 191 buildings were erected at a cost of $208,000. In 1888 there were 166, costing $190,000, and the prospects are that this year the increase will be quite as large. The duties on goods imported by the merchants in 1888 were $45,417. This is a mercantile as well as manufacturing centre, between 70 and 80 travelers being on the road representing the merchants and manufacturers.

A new opera house of large proportions is to be built next summer. The public halls now available are the Town hall, Oddfellow's hall and the Saenger Society hall. The Mechanic's Institute of the town has a library of over 3,000 volumes, and a membership of 1,200.

The history of Berlin may be told in a few words. Early in the century a few Dutch Mennonite settlers found their way from Pennsylvania, attracted by the Grand River as a water power. They were pleased with the place, and decided to stay. Others followed, and by 1805 there was a considerable settlement. To secure a good title to the lands, the friends in Pennsylvania raised the money, and the whole township was purchased and divided by lots among the settlers. In 1830 the first store was opened, and gradually other mercantile places were opened. The settlers from Pennsylvania were mostly farmers, but the fact of there being such a large settlement here attracted skilled workmen from the Fatherland. Workshops were built and industries started, mostly on a small scale. In 1852 it was made the county town of Waterloo. The opening of the G. T. R. in 1856, and the Galt branch of the Great Western, since passed into the hands of the G. T. R., helped it greatly on its career of prosperity. It has steadily grown, every year exhibiting a big step in advance of its predecessor. In 1867 the population was 2,135; in 1874 it was 3,202; in 1881 it was 4,079; in 1885 it was 4,865; in 1887 it was 6,125; while the population, as shown by the assessment roll of 1888, was 6,810, and the total assessment $2,617,900. It will thus be seen that its progress has been both steady and substantial. In a recent description of the town, the Toronto *World* thus spoke of its prospects: "Surrounded by a splendid agricultural country and prosperous villages, and being a working community possessing such a number and variety of stable manufacturing industries, Berlin cannot fail to prosper in the future even more than in the past. A street railway is to be laid down next summer to Waterloo, 2 miles distant, and the probability is that Berlin and Waterloo will eventually amalgamate and conjointly rise to the dignity of a city."

WATERVILLE, QUE.

The village of Waterville is situated on the Grand Trunk Railway, half way between Coaticook and Sherbrooke. The surrounding scenery is very picturesque and the country fertile. The population has doubled in the past four years, and the village is very prosperous. It is amply supplied with water-power, and forms a good site for manufactures, having convenient shipping facilities and reliable labor supplies. It has a Model School, which ranks high among the schools of the Eastern Townships. Here are located the fac-

tory and office of Messrs. George Gale & Sons, the well-known manufacturers of wire spring mattresses. This firm are probably the largest manufacturers of wire mattresses in the world, and their products go to Great Britain, Australia and other foreign countries in large quantities. One-third of their entire product goes to Great Britain, where they have regular agencies.

PETERBOROUGH.

The town of Peterborough is about 30 miles north of Lake Ontario and about 80 miles north-east of Toronto. The county of Peterborough, of which it is the chief town and the county seat, is one of the largest in area in Ontario, containing some 440,000 acres; and while one of the largest it is perhaps one of the best watered of any county in all the provinces of Canada. Within its limits are over 100 lakes, ranging in size from half an acre of water to many square miles, and in depth from a foot or two to over a hundred feet. They afford the most varied and pleasing scenery for the tourist, dotted as they are by verdure-clad islands of every variety of form to the number of over 2,000, and connected with each other by a wonderful network of rivers and streams, through which canoes and pleasure boats may be paddled or sailed with ease. These waters still abound with fish and game, and attract sportsmen from almost every part of the continent. In these sylvan lakes the American Canoe Association have held more than one of their annual camps.

On the river Otonabee, one of the largest of these numerous streams, is situated Peterborough. It was first settled in 1818 under the name of Indian Plain, but did not receive any accession of inhabitants till 1825, when Col. Peter Robinson, brother of the late Chief Justice Robinson, arrived with a party of settlers, and the village which then began to be formed took its name from him. In 1850 Peterborough and Ashburnham—a village which grew up on the opposite bank of the river—had together a population of 3,180. Now Peterborough alone has about 10,000 inhabitants, and possesses all the qualifications for incorporation as a city. Between 1870 and 1880 it just doubled in population, having made the largest increase of any town in Ontario except St. Thomas. It is already known as the "Plate Glass City," from the number of elegantly built stores with plate glass fronts on its principal business streets. In commercial and financial progress Peterborough stands unrivaled among the



progressive towns of Canada, and is destined to be the capital city of Central Ontario. Its position in the midst of a well watered and prolific farming country, with railways radiating from it to the East, West, North and South (including the Grand Trunk and Canadian Pacific), on the line of the projected Trent Valley Canal connecting the waters of Georgian Bay with Lake Ontario, separated by a distance of 30 miles from any town of considerable size, and with almost unlimited water power still available on the Otonabee, in and around the town, for manufacturing purposes—all seem to combine to assure it of such a destiny. It has already forty or fifty factories, some of which send their products all over the Dominion, while one or two even export to foreign countries. This latter refers chiefly to the canoe trade of which Peterborough is the cradle, the original inventor of the cedar rib canoe being a citizen of the town, and still living. In 1885, 200 new buildings, valued at over $135,000, were erected in Peterborough (not including Ashburnham, which is a separate corporation), and among these, besides several fine villa residences, were a stoveworks and a lock factory, the only large one in Canada. A number of important industries have been added since, and the amount spent in new buildingshas averaged over $200,000 annually since. The amount in 1888 was $270,000, or including Ashburnham $315,000. Among the new buildings is the Nicholl Hospital, the gift of a wealthy lady citizen, whose name it bears. The town has an efficient system of waterworks, a good telephone and telegraph service, and is lighted by both gas and electricity, the latter being supplied by the river water power, which furnishes a cheap and remarkably regular light.

The steady growth in the value of real estate is one of the features of the development of the town. Fifty years ago land in the village could be had anywhere for $1 an acre; now lots in the centre of the town sell as high as $300 a running foot, 14 foot depth. Several properties in the business parts have doubled in the past five years. No Canadian town is in a more solvent condition. Its only corporate liabilities are debentures raised for school purposes and local improvements, and the railway stocks alone that are held by the corporation will, it is said, overpay these when they become due in 1890 by $50,000. The total assessment of the town is over $4,000,000, and the taxation is only about 1¼ per cent. on the assessed value of the property. It may be a fact worth nothing that one lady citizen of Peterborough is reported to be worth $3,000,000,

and is the largest bank stockholder of any person in Canada. The town has three prosperous real estate companies, one of which does business also in Toronto, and four banks have flourishing branches here.

With the advantage of shipment by the two great systems of railways, the general trade of Peterborough steadily develops. In a recent year there where exported 150,000 bushels of wheat, with 15,000 barrels of flour, 275,000 bushels of barley, and 30,000,000 feet of lumber. Of late years stock raising and the cheese trade have developed greatly, the country about here being eminently suited to dairying. Some 16 factories are represented at monthly cheese fairs of Peterborough, from which is now shipped about 75,000 lbs. of cheese in a season. The policy of the town has always been generous towards new industries, it having on more than one occasion helped factories by exempting them from taxation for a term of years.

Turning to the religious and educational features, we find that Peterborough has seven churches,—two Presbyterian, two Methodist, one Anglican, one Baptist, and One Roman Catholic, besides a Salvation Army and Saved Army barracks. Three fine church edifices were erected during the past year. There are four public schools, one for each ward, two separate schools, a convent, a collegiate institute, and a commercial college. There are three well edited daily papers, one morning and two evening, each having a weekly edition, and there is a journal devoted to the timber interests (the only one of its kind in Canada), and one to agriculture. The town has also an excellent public library and reading-room containing over 5,000 volumes, and a law library, the best in Ontario of its class outside of Toronto, Hamilton, and London. A public park is also now being laid out for a benefit of future citizens.

MONTREAL.

Although not the seat of government, even of its own province of Quebec, Montreal is the chief city of Canada, and its commanding station at the head of ocean navigation up the great St. Lawrence, while being also the sole outlet of navigation for the vast chain of inland fresh water seas, marks it out for a great commercial future. While thus the leading seaport and manufacturing centre of the Dominion, its magnificent situation on the fertile island formed by the confluence of the Ottawa with the St. Lawrence, and overlooked

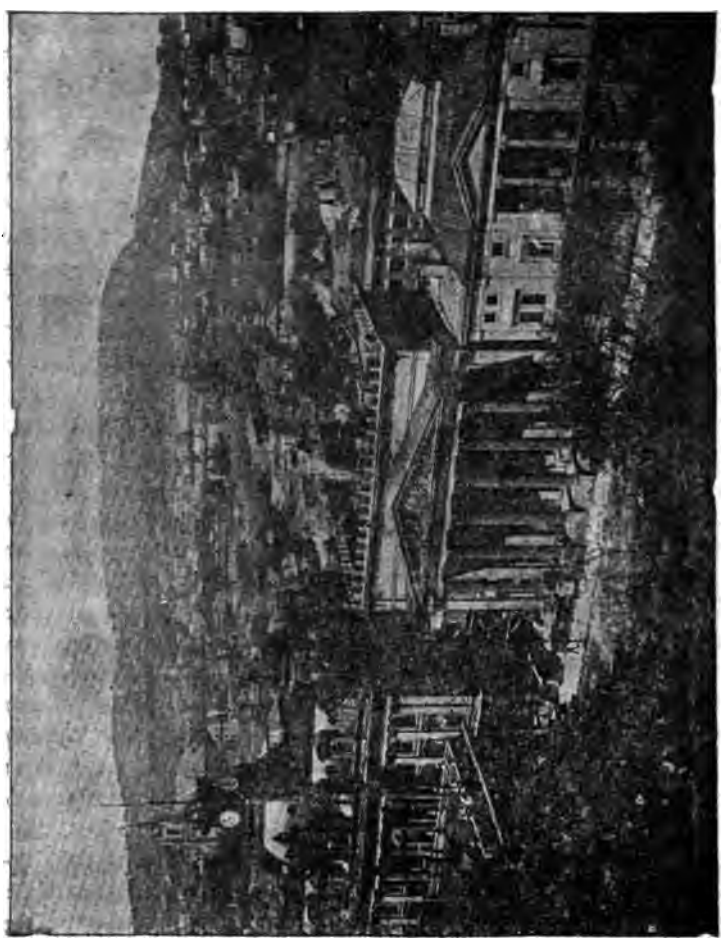


by an imposing mountain, gives it many attractions for the seeker of scenic beauty; while to these attractions are to be added a long and romantic history.

EARLY HISTORY.

Montreal was founded on the site of the Indian town of Hochelaga, a name still preserved in one of the wards of the city and in many local institutions. For more than a hundred years before the knightly Maisonneuve landed here, Hochelaga is known to have existed as a fortified town. "It was no blind chance," says a writer in "Lovell's Gazetteer and History of Canada," "that planted those rude primeval warriors, hunters and husbandmen on the spot where Jacques Cartier found them. For security, for shelter, for convenience of *rendez-vous*, for purposes of traffic, no point could present better facilities. It was the same instinct that guided the half-civilized hordes of the early eastern world to the sites of Nineveh, of Babylon, of Memphis, of Tyre, which impelled the children of the forest to make a stronghold of Hochelaga. Though they could not conceive the possibilities of its development under a direction superior to their own, they saw that the situation was favorable for the supply of their rude needs, and thus unconsciously predicted its remoter and grander destinies. Those destinies had, indeed, been marked out by patient, far-seeing Nature, in the very dawn of time. The slow preparation for fulfilment began when the primeval germ of the continent rose, bleak and lifeless, above the archæan sea. By the unhurrying action of mighty forces below and above, its foundations had been laid deep and solid. The throes of the volcano raised aloft its mountain bulwark. True father of waters, the first born of American rivers had indicated it as the *entrepot* of nations to be born, ere yet the Mississippi Valley had emerged from the primal ocean."

Upon the triangular piece of ground upon which stands the Custom House, with its clock tower overlooking the busiest part of the wharves, Sieur de Maisonneuve landed in May, 1642, to lay the foundations of a city, and from it to establish a new "Kingdom of God." The ceremony that took place upon his landing, the name—Ville-Marie—that was first bestowed upon the place, and the circumstances of its early development all show that though it was so well suited for trade Maisonneuve had in his mind a religious and not a



MONTREAL, FROM THE PLACE D'ARMES.

commercial purpose. The following extract from Francis Parkman's history gives a picture of the scene at the landing :—

" Maisonneuve sprang ashore and fell upon his knees. His followers imitated his example; and all joined their voices in enthusiastic songs of thanksgiving. Tents, baggage, arms and stores, were landed. An altar was raised on a pleasant spot near at hand; and Mademoiselle Mance, with Madame de la Peltrie, aided by her servant Charlotte Barre, decorated it with a taste which was the admiration of the beholders. Now all the company gathered before the shrine. Here stood Vimont in the rich vestments of his office. Here were the two ladies with their servant, Montmagny, no very willing spectator; and Maisonneuve, a warlike figure, erect and tall, his men clustering around him. They kneeled in reverent silence as the Host was raised aloft; and when the rite was over, the priest turned and addressed them—" You are a grain of mustard seed, that shall rise and grow till its branches overshadow the earth. You are few, but your work is the work of God. His smile is on you, and your children shall fill the land."

The expedition had been fitted out, we are told, solely to found in this new world a veritable " Kingdom of God," as understood by the devout Catholics of that day, and the inception of the enterprise was encouraged by " voices and revelations " and by providential occurrences, that sustained the zeal of its originators through difficulties by which they would otherwise have been overwhelmed. When Maisonneuve had arrived at Quebec on his way up, the Governor tried to dissuade him from carrying out his idea, placing before him the dreadful character of the Iroquois Indians. " Gentlemen," replied the courageous man, " if all the trees on the Island of Montreal were turned into Iroquois, I am bound by honor and duty to go." " A stately and chivalrous figure," says Mr. Dawson, " this grand religious knight of antique mould. Any city might be proud of such a founder."

The early history of Ville-Marie is full of romance. Champlain, very unwisely, sided with the Hurons in the bitter war which was raging at the time of his arrival, and the French for fifty years struggled with difficulty against the enterprises of their implacable enemies. Montreal, being nearer to the Iroquois cantons, chiefly felt their fury, and in 1660, the whole island up to the palisades of the town was swept by Indian war-parties. A deed of heroism—by which Dollard and 17 other Frenchmen devoted themselves to

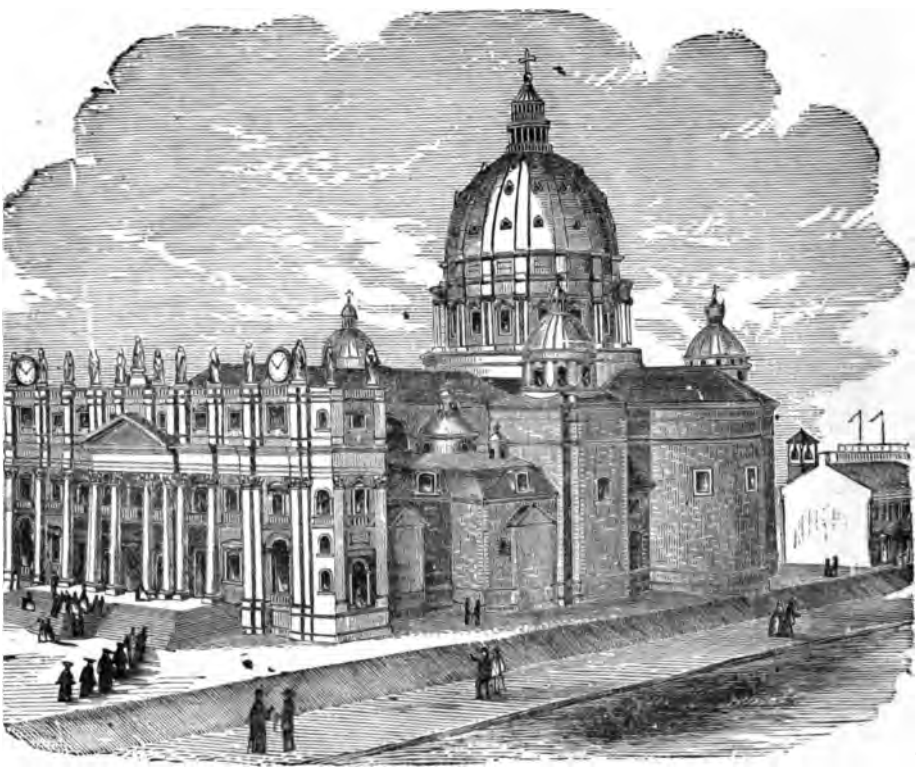
death—alone saved the town. In 1665 the Marquis de Tracy arrived from France with the noted Carignan regiment. He defeated and punished the Iroquois, and established forts at St. Therese, Sorel and Chambly, to check their incursions. The two latter places still retain the names of the captains of his regiment who built the forts. Then Montreal rapidly grew into importance, and became the centre of the fur trade with the West, and of the expeditions to retaliate upon the English colonies, to the south, the atrocities which the Iroquois, the allies of the English, had inflicted upon Canada. From Montreal also started Joliette, Hennepin, and La Salle on their adventurous careers of western exploration.

Montreal became a fortified city, and the remains of these old forts are still to be traced about the city and on the picturesque St. Helen's Island opposite. In 1760 Montreal, after the fall of Quebec, capitulated to the English. Sixteen years later it fell for a short time into the hands of the Americans in their struggle for independence, and was visited by Ben Franklin who operated the first printing press used in Montreal. After the Revolution Montreal began to thrive under British rule, and became the political as well as the commercial capital of Canada. The former honour, however, was taken away from it as a punishment for the riots and the burning of the Parliament buildings in 1849.

Architecturally speaking, Montreal is the London of Canada. It has more variety in its architecture, and its public buildings are more massive and tasteful than those of almost any city on the American continent. The blue gray limestone with which the island abounds is eminently suited to producing graceful effects in architecture. Most of the private houses are built of stone, and several of the better class have been built at a cost of over half a million dollars.

CHURCHES.

Mark Twain expressed his appreciation of the number of churches in Montreal, by saying he was never in a city before where you "couldn't throw a brick-bat without breaking a church window;" and from the circumstances attending the foundation and rise of the city, the reader will be prepared to find the church and other religious edifices, not only large in numbers, but possessing a varied and often romantic history. It is only possible here to mention some of these edifices by name, referring the historically inclined



ST. PETER'S CATHEDRAL.

reader to local histories and guide books.` The new cathedral of St. Peter, now nearly completed, is the largest in size of any church in America, being one half the dimensions of St. Peter's at Rome, of which it is an almost an exact reproduction. Its length is 330 feet, breadth of transcept 225 feet, and height of dome from floor to golden cross 250 feet. Though largest in size it is surpassed in capacity by Notre Dame church, Place d'Armes square, which will seat 10.000 people. Notre Dame stands upon the site of the church built in 1672, and its twin towers, 220 feet high, make it a prominent landmark. The towers contain ten bells, one of which weighs 29.400lbs., and is understood to be the largest in America. It is called "Jean Baptiste," and the two largest of the others were christened "Maria Victoria" and "Edouard-Albert-Louis." The interior decorations are very elaborate. From the top of these towers

work entirely of French Canadian builders and artists.

Among prominent Protestant churches are Christ Church Cathedral, said to be the purest specimen of gothic architecture in America; the new St. James Methodist church finished in 1875 at a cost of $300,000—said to be the most expensive Methodist church in the world—and presenting an exterior of beautiful proportions; Crescent street Presbyterian church, American Presbyterian church, St. Paul's church, St. Andrew's, Erskine, Knox and St.





church; while almost every denomination is represented with one or more churches. There are altogether 80 churches in Montreal, including two Jewish Synagogues.

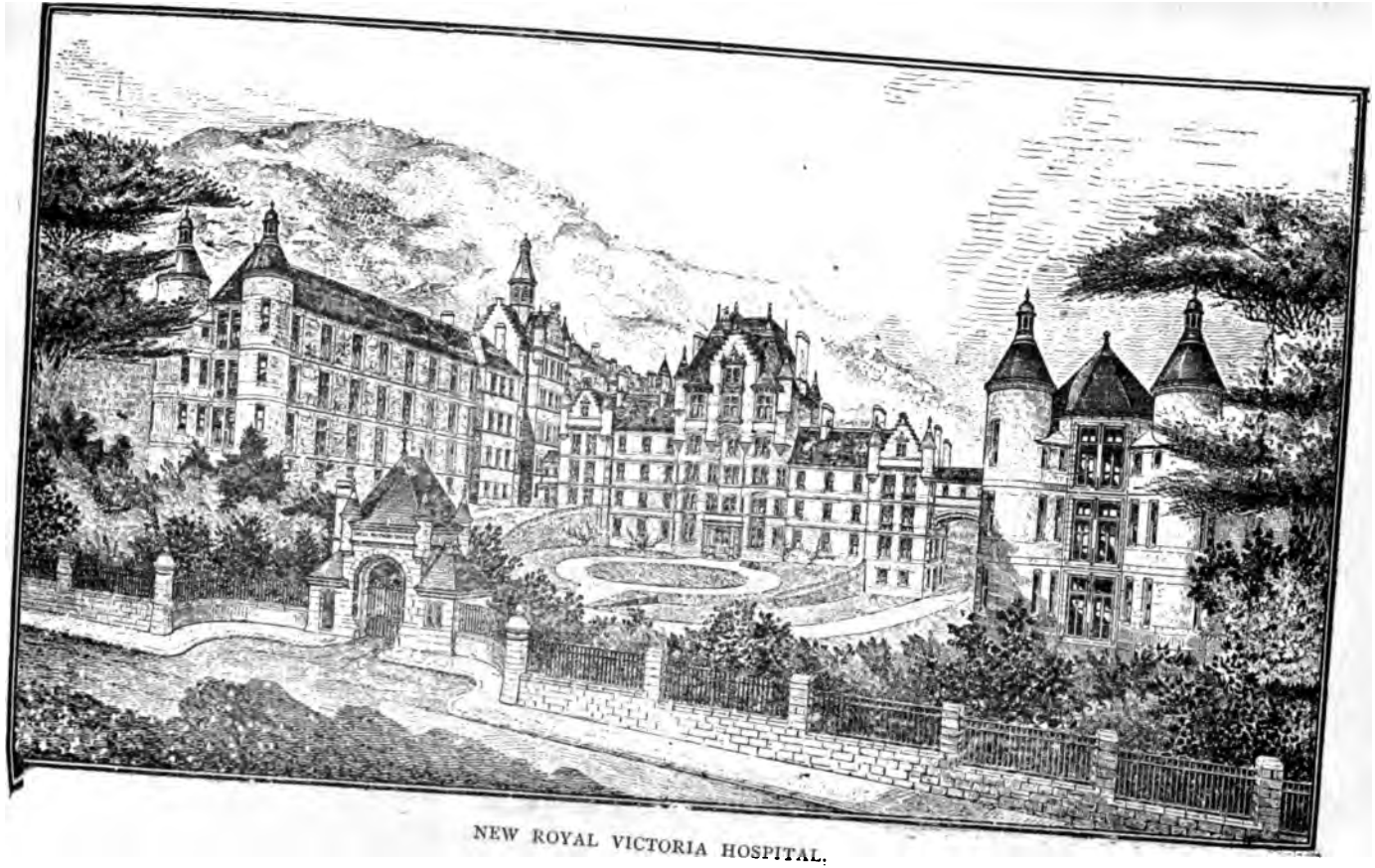
With few exceptions, a creditable good will has existed among the different religious sects from the earliest times. We are told that "for twenty years after 1766, the church of England people occupied the church of the Recollets every Sunday afternoon. The Presbyterians used the same church before 1792, and when the congregation moved into their first church in St. Gabriel st., they presented to the priests of the Recollet Church a gift of candles for the high altar, and of wine for the mass, as a token of good will and thanks." It is earnestly to be hoped that this good will and amity will always continue between the religious denominations.

Montreal also abounds with religious and benevolent institutions and societies connected with various nationalities, but these are too numerous to mention. The new Royal Victoria Hospital, the Queen's Jubilee gift of two prominent citizens, is now under construction, and a view of the structure as it will appear when finished is here given.

The city has long been famous for its

EDUCATIONAL INSTITUTIONS.

McGill University, founded by an old fur trader and merchant of that name, who lived at the beginning of the century, and enlarged by the bequests of other liberal citizens, is second to none among the universities of the continent. It has four faculties—Arts, Applied Science, Medicine and Law. Connected with it is the Redpath Museum of Natural History and Geology. The University has a library of 25,000 volumes. What McGill is to the English and Protestant element, Laval University is to the French and Roman Catholics of the province. The chief seat of this institution is in Quebec,—under which head it is more fully noticed. The Montreal branch is not a separate establishment, but an integral part of the university. Among other large Roman Catholic institutions is the Seminary of St. Sulpice. "In the year 1636 the zealous Abbé Olier, while praying in the church of St. Germain des Prés, Paris, received, or thought he received, a divine revelation to found on the island of Montreal a society of priests for the propagation of the true faith in the new world. Led by various mystical guidings, he formed the acquaintance of Dauversière, a receiver of taxes in



NEW ROYAL VICTORIA HOSPITAL.

Anjou, whose mind had been prepared in a similar mannery. They resolved to found three religious orders : one of priests to preach the faith ; another of nuns to nurse the sick ; and a third of nuns to educate the youth. The dream of these enthusiasts is to-day realized in the Seminary of St. Sulpice, the hospital of the Hotel Dieu, and the schools of the Congregation of Notre Dame." St. Mary's college, carried on by Jesuits, and possessing a fine museum ; Jacques Cartier Normal School ; the Convent of the Sacred Heart, having three establishments ; the Hochelaga Convent, two establishments, should also be mentioned. The Sisters of the Congregation of Notre Dame, before alluded to, have 17 establishments, and about 6,000 pupils in Montreal alone, besides houses in the Maritime Provinces and the New England and Western States. They have in all about 600 professed teachers.

Among the Protestant institutions, besides McGill University, are McGill Normal School, the Presbyterian College, University of Bishop's College, Anglican Diocesan College, Congregational College, and the Wesleyan Theological College. The Presbyterian College is affiliated with McGill University, and has recently been enriched by a new series of buildings (including convocation hall, library offices, dining hall and dormitories) called the Morrice Hall, costing over $75,000, the gift of another large-hearted citizen, Mr. David Morrice.

PARKS AND SQUARES.

Montreal has more beautiful parks and public squares than any city in Canada. The whole extent, nearly, of Mount Royal, with its lovely drives and unrivaled views of the city, the St. Lawrence, and surrounding country, has been set apart as a public park. It covers 430 acres. On the western slope of the mountain lie, side by side, the Catholic and Protestant cemeteries, with their monuments shining through the foliage ; and from the southern slope rise the minarets and domes of Monklands or Villa Maria, the former residence of the Governor General, and now belonging to the Sisters of the Congregation of Notre Dame. The mountain rises to a height of 700 feet, and the views presented from the observatories are extolled by all travelers. St. Helen's Island, lying in the middle of the river, just opposite the city, was formerly devoted to the military garrison, but is now turned into a park for the peaceful recreation of the citizens, and groups of happy children now play about the old fort-ruins.

One fort remains as a depot of stores, but the only time when the island wears anything like its old military aspect is when the volunteer artillery hold their annual drills here. Viger Garden, with its handsome conservatory and fountains; Victoria Square, containing a statue of the Queen, by Wood; Dominion Square upon which faces St. Peter's Cathedral, and three other churches, with the new Young Men's Christian Association building and the Windsor Hotel; the Place d'Armes; Jacques Cartier Square with Nelson's Monument, and trophies from Sebastopol; and the Champ de Mars where the armies of three different nations have paraded as masters, are among the other public squares.



CITY HALL.

PUBLIC BUILDINGS.

Among the public buildings of Montreal are the Post Office, which although considered the finest in Canada is already becoming too small for the amount of business in it: the City Hall, an imposing block 485 feet long, in modern French style; the Court House; the new drill hall opposite the Champ de Mars; the custom house and examining warehouse; Bonsecours Market; Harbor Commissioners office, and Board of Trade and Corn Exchange rooms. All the municipal offices, the Recorder's Court and Police office are in the City Hall. The city is governed by a mayor, elected annually, as president of a board of 36 aldermen. Three aldermen, one of whom retires annually, are elected by each of 12 ten wards of the city.

VICTORIA BRIDGE.

This great achievement in engineering skill was begun in 1854 an finished in 1859. The designs were by Robert Stephenson th celebrated engineer, assisted by A. M. Ross: but the idea was adv cated years before that by Hon. John Young and Mr. T. C. Keefe The engineers skillfully availed themselves of a ledge of rock, whic forms the river bed between Point St. Charles and St. Lambert, t found the structure upon. The bridge is 9,184 feet long, and i supported by 24 piers besides the terminal abutments. The centra span is 330 feet, and its piers are 60 feet above the summer level o the river. The spans, or "tubes," which rest upon these piers ar constructed so as to allow for the contraction and expansion of the iron in winter and summer. The piers are much wider at thei bases than their top, and this increase is nearly all on the upstrean side, where each has a sharp edge made to break up and ward off the enormous force of the ice, when the "ice shoves" take place in the spring. In the construction of this work, there were used 3,000,000 feet of masonry; 8,250 tons of iron tubing, and 2,500,000 rivets. It has 30 acres of painted surface. Three thousand and forty men, 142 horses and 4 locomotives were employed on the works, and the cost was $6,300,000. Views of it are shown on pages 206, 207 section 1.

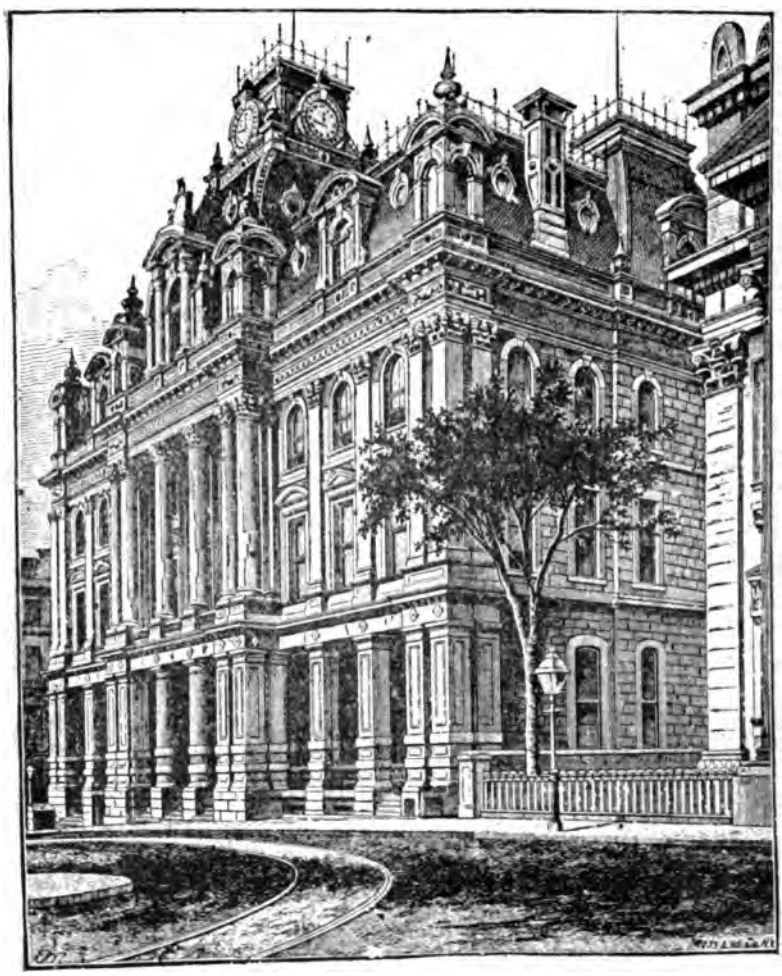
AMUSEMENTS.

The city is well provided with amusements and facilities for out door sports. It was in Montreal that the snowshoe and toboggan ing costume now so popular over the continent first appeared as a winter sporting suit; it is to Montrealers that Americans and the young men of other cities owe the example of forming snowshoe clubs, and it was Montreal that originated on this continent the winter carnival. This boreal festival, with its gorgeous ice palaces and monu ments, attracts hundreds of thousands of visitors from all parts of the world, and while affording a unique round of outdoor and indoor sports, is doing the service of correcting in the minds of foreigners the prejudicial impression of the rigors of a Canadian winter.

COMMERCIAL.

If Montreal is rich in historic associations, it is also rich in com merce and manufactures. Situated on the banks of the greatest river in the world, its shipping has developed and its harbor accom modation so improved, that it is likely soon to become a greater

shipping centre than any port in North America, besides New York. It is the natural ocean outlet for nearly two-thirds of the area of the continent, and the trans-continental route via Montreal is shorter



POST OFFICE.

than any other by hundreds of miles. Montreal is 288 miles nearer Liverpool than New York, and Chicago by this route is 368 miles nearer Liverpool. Fifteen years ago a single line of railway entered

the city of Montreal; now it is the converging point for 14 lines ar their affiliations. It is the great central station of two of the mo magnificent railway systems in the world—the Grand Trunk and th Canadian Pacific—whose splendid workshops and warehouses em ploy about 50,000 people. The total mileage of these great systen —which are more particularly described elsewhere—is over 8,00 miles and their capital over $376,000,000.

The port of Montreal enjoys the singular distinction of being a ocean port, and yet 986 miles inland from the sea—reckoning this t be the straits of Belleisle. It has direct connection by water with tha great chain of inland seas, which make the geographical situatio of Canada unique; and the progress that has been made in respec of shipping has reduced the cost of freight here nearly one half i the last twenty years. While the total foreign trade of Canada ha increased about 15 per cent. in ten years, that of Montreal itself ha increased 40 per cent., or from about $50,000,000 to about $70,000, 000. The exact figures for 1888 were exports $27,262,174; import $42,245,469, making a total of $69,507,643. The steamship lines t Montreal rank in tonnage and equipment with the best in the world It is the head port of eight different lines, comprising about 7 vessels, including two or three under construction, with a tonnage o 200,000 tons and worth about $25,000,000. The principal of these lines are the Allan and the Dominion Lines, some of whose vessels are of over 5,000 tons, and magnificently fitted for passenger service. The tonnage of ocean vessels that arrived in the port in 1878 was 397,266 tons, and in 1888 it was 782,473 tons; of inland vessels the total tonnage in 1878 was 764,243 tons, and in 1888 it was 863,014 tons. The total arrival of vessels of all classes in 1888 was 6,155 with a total of 1,645,487 tons. In the year 1853 only vessels drawing not more than 11 feet of water could come up Lake St. Peter—the shallowest part of the river between Quebec and Montreal—but by a system of dredging which has cost about $5,000,000 this channel has been deepened to 27½ feet. About $3,500,000 have been spent on the wharves and harbor facilities of Montreal, and these are now being extended by the addition of wharves at Hochelaga, making a line of about five miles of wharves.

The combined exports and imports of Montreal amount to eight-ninths of the trade of the province, and out of $9,521,054 duty paid on goods by the whole province in 1888 Montreal contributed $8,548,739. The total foreign trade of Montreal amounts to $10,-

000,000 more than the foreign trade of all the provincial capitals combined; and it is more than one-third the total trade of the Dominion itself. Every business day in the year, Montreal contributes $25,000 to the revenue of the Dominion. Among the items of export during the season of navigation in 1888 were 120,979,881 feet of lumber, 16,133 tons of phosphates, 5,658,227 bushels of grain (of which 2,033,325 bushels were wheat and 2,721,282 were maize), 61,003 head of cattle, 46,223 head of sheep, 264,113 barrels of apples, and 70,186,913 lbs. of cheese.



MERCHANTS' BANK.

Regarding the future of Montreal's shipping trade, a writer in the London *Statist* makes the following forecast:—

Nothing can prevent the traffic of the "Soo" from going eastward through Canada. And a great deal of traffic now making a long *détour* south to Chicago will in future take the straight road to Montreal. By the "Soo" from St. Paul or Minneapolis to St. Lawrence will be four or five hundred miles shorter than to New York. Moreover, the St. Lawrence is another several hundred miles nearer Liverpool than New York. If ever the Canadians had a chance to get their share of Western business it is now, and if Montreal is ever to become what it should have been years ago,—the great *entrepot* of Western trade north of the lakes, it should assert its claims very speedily. It has a chance before it such as history offers to a people only once in centuries.

FINANCIAL AND MANUFACTURING.

Montreal has about two thirds of all the banking capital of the Dominion. The Bank of Montreal corresponds to the Bank of England. Is the largest monetary institution on the continent and the largest colonial bank in the world. Eight banks have their head offices in this city, and there are many branch banks and private banking institutions. The Bank of Montreal has a paid up capital of $12,000,000, and the other principal banks swell this to about $30,000,000.

The wholesale houses of Montreal are the largest and wealthiest in the Dominion in all of the staple lines of goods, while it is also the largest produce centre. Out of 85 million pounds of cheese shipped from Canada to foreign countries, about three-fourths is sent out by Montreal produce houses.

While always a large manufacturing centre, Montreal is year by year achieving a more decided pre-eminence. The working population are prosperous, and the city has been and still is remarkably free from the strikes and the wrangles of labor organizations. The French-Canadian workman is tractable and reliable, and these qualities combined with the skill and adroitness that belongs to the race, will always give Montreal a great advantage as a manufacturing centre. In 1883 Montreal had 35 boot and shoe factories, with other leather works, the total hands employed in the shoe trade being over 5,000, and the factories producing 15,000 pairs per day or $5,500,000 worth per year. At present the number of boot and shoe factories is 51, besides about 25 manufacturers who employ from 5 to 20 hands, but who have no regular factories. There are in and around the city about 30 tanneries. In the textile trades there are three large cotton mills : one the largest in Canada (having 110,000 spindles and an annual capacity of a million and a half pieces of cloth), a large silk mill, and several miscellaneous textile factories. In the ready made clothing trade Montreal leads the Dominion, having about a dozen large manufacturing establishments, one of which employs over 1,500 hands, and nearly all of which ship their goods to every province in Canada. Montreal has also been the headquarters of the fur trade, both in the raw and manufactured goods, from its earliest history. In former days, as now, it was the head depot in Canada of the Hudson Bay Co., and although the great annual sales of Canadian raw furs are now held in London the Montreal market prices act upon the



London market as in early days. About four-fifths of the manufactured furs supplied to the trade of Canada are sent from the factories of this city, and the goods are in high repute among American and English visitors. The iron and steel industries of the city are also on a larger scale than in any other place in the country. The products of the tack, cut and pressed nail, and horseshoe factories of Montreal, not only find their way all over Canada, but are shipped in increasing quantities to Great Britain, Germany, India, China, Japan, South Africa, South America and Australia. About 1,600 hands are engaged in this industry, employing capital to the amount of $2,000,000. The iron foundries, machine shops and manufactories of steel are also extensive. There are also three large safe factories and two sewing machine factories, situated here, with many kindred industries, making a large aggregate of capital and hands employed. In the manufacture and refining of sugar, almost the entire industry of Canada is centred in Montreal, nearly all the Dominion being now supplied by these factories. Two of the largest of these factories produce 2,000 barrels of refined sugar per day each. It is admitted that the skill attained by these manufacturers and the quality of the sugar produced are not surpassed by any in the world. Indeed in several points the Montreal refiners have made scientific improvements in advance of those of European factories. The paper making industry of Canada is yearly assuming greater importance. At the time of confederation there were but three or four such mills in Canada, and now there are 67 paper and pulp mills containing 56 paper making machines employing a capital of over $3,500,000, and making 115,450 tons of paper and pulp. One half of this capital is owned or controlled in Montreal, and one establishment turns out twelve tons of finished paper per day. The flour milling industry is also of considerable extent, one firm owning five mills with a capacity for grinding 5,000 barrels a day, being the second largest milling concern in the world.

Montreal has many other industries of importance, all of which are prosperous, and show the special natural advantages of this great city as a manufacturing centre.

A few facts, in conclusion, will show that although Montreal is now approaching the 250th anniversary of its foundation, its civic and commercial progress has been a matter of comparatively recent date. Fifty years ago its population was less than 30,000, taking

in all its suburbs; now the population, including the suburbs, 230,000. Then there was but one railway in all Canada, and t ran from Laprairie, opposite Montreal, to St. Johns (15 miles), a was built with *wooden rails*. Then there were no canals, and required 12 days for goods to reach Kingston, and to get them the by means of combined land carriage and bateaux, required six tr shipments. The total imports then averaged about £1,250,000.

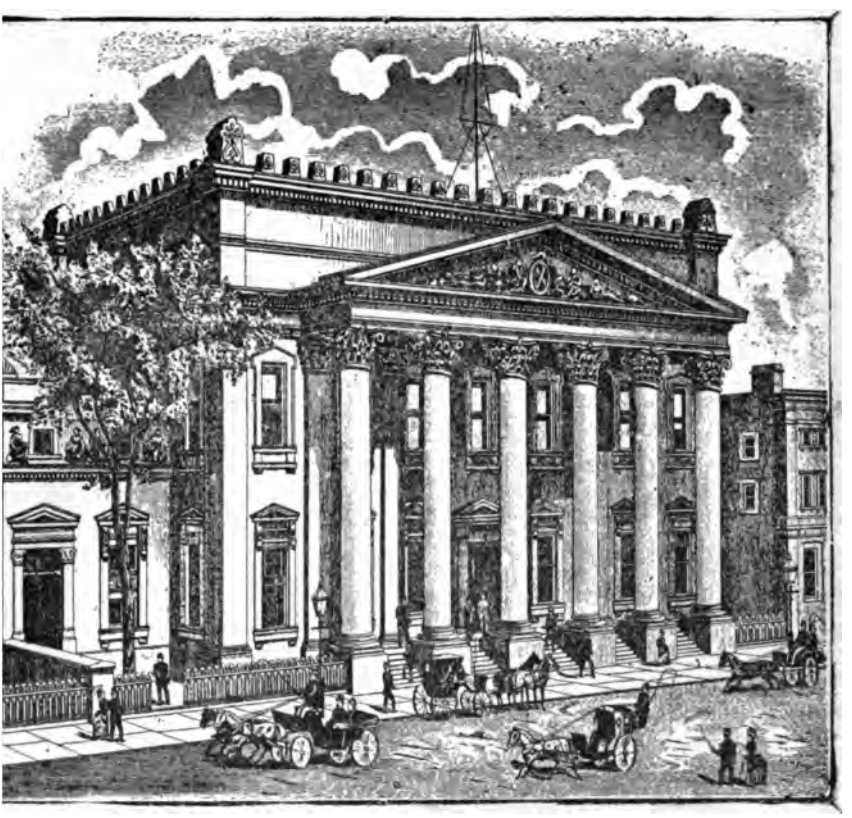
There were no police at that time, but the city was patroled night by 32 watchmen under a "watch and night light act," th being 16 stations in various parts of the city. A water works co pany supplied water to their "tenants," and the kind of service was may be imagined from an announcement in the *Gazette*, t "to insure a supply to those tenants in St. James and St. P streets, who were deprived for the last 12 months," water would put on to places west of Place d'Armes in the forenoon and eas that in the afternoon.

All the central portion of St. James st., now almost entirely fil with the magnificent head offices of banks and insurance co panies, with millions of dollars of capital, was fifty years ago the s of half a dozen wooden dwellings on the south side, while on north an old board fence enclosed a burying-ground which cove the space from the Merchants' Bank to Victoria Square. This ha some Square was thirty years ago a miry hay market, surrounc on three sides by wooden shanties, and on a fourth by a board fen Not long before that it was a swampy common, through which ra creek, and it was only used as a cow pasture. Fifty years ago th was not a single business place in Notre-Dame street, and bu dozen or so private houses. Now it is the longest street in the ci being built up to the length of about six miles, and possesses ma magnificent blocks of retail stores. Fifty years ago McGill str had only two houses. Craig street, now a long and busy thorou fare, is another creation of the past forty years. Previous to th date its site was the bed of a creek, across which the citizens we on planks or little wooden bridges. Such are some of the chang in the city during the past half century.

The city now has 140 miles of streets, and the assessable value property in 1888 was $107,600,000. A statement prepared by t City Treasurer last year shows that the weight of taxation is lighter Montreal—considering the conditions of the civic debts,—than a one of 17 leading cities of the continent, Quebec excepted. The de

per head of population is $63, or lower than London, Hamilton, Toronto, Quebec, and most other leading Canadian and American cities.

Partly with the object of the conversion of the civic debt a 3 per cent. loan was placed on the London market by Montreal in



BANK OF MONTREAL.

1888. The whole amount was subscribed for at an average of 83 per cent. This was the first 3½ per cent loan ever successfully placed on the English market by a colonial city.

OTTAWA.

The City of Ottawa, Capital of the Dominion of Canada, is sit ated on the bank of the Ottawa, or Grand River, in the County Carleton, Ontario. It is 120 miles from Montreal, the same di tance from Kingston, 280 miles from Toronto, and 75 miles fro Brockville. It is now easy of access from all points: by the Gran Trunk, the Canadian Pacific, the Canada Atlantic, the St. Lawrenc & Ottawa, and the Toronto & Quebec Railways, as also by the fin steamers of the Ottawa River Navigation Company, and by boa on the Rideau Canal, between the city and Lake Ontario.

THE OTTAWA RIVER,

upon the bold and commanding banks of which Ottawa stands takes its rise near the 49th parallel north of latitude; and afte descending through smooth stretches, and many falls of marvellous beauty, a course of four hundred miles, it empties itself into the St. Lawrence at two points of confluence, one above and the other below the Island of Montreal. This noble river, which is the largest of the third class, drains an area of 57,800 square miles. Its principal tributaries are the North River, the Rouge, North and South Petite Nation, Riviere du Lievres, Gatineau, Rideau, Mada-waska, Bonnechere, Coulonge, Petewawa, Black, du Moines, Mat-tawa and Montreal Rivers. The high and dry position of the ground upon which the city is built, and its admirable system of drainage, by means of a large main sewer, and subsidiary drains, renders Ottawa one of the most delightful and healthy cities on the Ameri-can continent.

THE TOWN OF BYTOWN,

out of which Ottawa has grown, was founded in the year 1827, the period of the commencement of the Rideau Canal, an Imperial undertaking constructed for military purposes, as an internal means of communication between Quebec and Lake Ontario. From its central position, its natural territorial advantages, and the facilities which it affords for fortification, prior to the union of the British North American Provinces, in compliance with colonial reference Ottawa was selected by Her Majesty the Queen as the political capital of Canada. Its solid natural advantages must have been



powerful and peculiar to ensure success in a competition for metropolitan honors in which Montreal, Quebec, Toronto and Kingston were rivals.

Ottawa was incorporated as a city with ten thousand inhabitants, in the latter part of the year 1854, the act of incorporation coming into operation on the first day of January, 1855. It is divided into eight wards, named respectively, Victoria, Dalhousie, Central, Wellington, St. George's, By, Ottawa and Rideau; and under the Municipal Act of the Province of Ontario, each ward is represented by three Aldermen elected annually on the first Monday in the month of January. The city contains at present about forty-one thousand inhabitants, of English, Scotch, French, Irish and German origin, and it is believed this will be doubled in ten years. Its annual assessment is about $16,500,000. It is well supplied with mercantile establishments of every kind, and its hotel accomodation is ample and excellent. The leading hotels are "The Russell," the "Grand Union," and the "Windsor."

Ottawa has a most efficient Fire Brigade and a fire alarm telegraphic system of the latest and most efficient kind. Since May, 1885, the city has been lighted by the Arc electric light. Incandescent lamps are also in general use in business and other houses.

The City of Ottawa is the centre of the great lumbering operations of the Ottawa Valley, in the manufacture of square timber and sawn lumber. In the prosecution of this important staple trade thousands of men and horses are continually employed, cutting and taking out square timber and saw-logs during the winter months, and rafting up and floating them to the mills and to the Quebec and United States markets in summer.

In the lumbering operations of the Ottawa and its tributaries, in the square timber department alone, millions of dollars have been invested, apart from the immense expenditure incurred in the purchase of limits, the production of saw-logs, and in the erection of the many vast mills within the limits of the city, and in its immediate vicinity, for the purpose of manufacturing sawn lumber of every description, including laths and shingles, sashes, doors, blinds, and planed boards.*

*Much of this manufactured lumber is exported to Europe, the United States, Australia and other countries.

Within the limits of the city the chief attractions are the Government Grounds and the

PARLIAMENT AND DEPARTMENTAL BUILDINGS.

Situated on a lofty hill overlooking the Ottawa River, these grounds for beauty of situation are unsurpassed, if equalled, in America.

"THE LOVER'S WALK,"

about half a mile in length, around the face of the cliff, shaded by trees of great beauty, is one of the most delightful retreats imaginable; and the Parliament and Departmental buildings, east and west, are marvels of architectural grace and perfection. The general style of architecture of these buildings is a modified 12th century Gothic. The principal material used in their construction is a hard, cream-colored sandstone, from the adjacent Township of Nepean. The dressings, stairs, gablets, pinnacles, &c., are of Ohio free-stone, whilst a pleasing variety is given to the whole by the relieving arches of red Potsdam sandstone, over the windows and door openings. The roofs are of Vermont slate, of a dark color, variegated by light green bands. The marble was obtained at Arnprior, and the timber used, excepting the oak, at various localities in the Ottawa Valley. These magnificent piles of architecture cost between five and six millions of dollars.

In the central building are the SENATE CHAMBER and HOUSE OF COMMONS, both beautifully finished inside. The roof of glass above each, through which the light is admitted, is supported by numerous marble columns, of elegant design and high polish. The grounds around the Parliament Buildings are artistically and elegantly laid out, and constantly maintained in a flourishing condition by steady attention, and the judicious use of an unfailing supply of water.

Not the least interesting place on Government Hill is the

PARLIAMENTARY LIBRARY,

which is located in a circular building on the north, or river side of the Parliament buildings; and contains a vast number of books of every kind arranged with great regularity and catalogued and indexed in the most thorough and convenient manner. In the



interior a statue of Her Majesty the Queen stands in the centre of the circle, which gives an interesting and beautiful finish to the elegant design of the structure, comporting well with the air of regularity and compactness visible in the distribution and position of the books.

THE PATENT OFFICE,

also, will well repay a visit. In this department is kept models of all the patents which have been granted. The list of the patents issued is long and varied; and if they continue to increase in the future as they have multiplied during the past few years, additional room will shortly be required for the proper disposition and custody of those important and interesting evidences of the inventive talent of the country.

In the corridors of the Parliament buildings may be seen large-sized portraits of many of the old members of the Canadian Legislatures, including members who have passed away; and who, during their lives, had made themselves conspicuous in the annals of their country. To those who are acquainted with the past and present history of Canada, those silent evidences of the stirring political events of the past must prove peculiarly interesting.

THE DEPARTMENTAL BUILDINGS,

east and west, are occupied as offices by the officials of the civil service, and hitherto have furnished sufficient room. Recently, however, the necessary accommodation for the work and storing of official documents has not been available; and a new block of Departmental Buildings is now in process of erection on the south side of Wellington street, immediately opposite the government grounds. It is expected that this massive block, when completed, will furnish ample accommodation for the rapidly increasing exigencies of the public service. In addition to its necessity and convenience this fine range of buildings, when finished, will have a strikingly ornamental effect from the Government Hill, and impart a massive and uniform finish to the appearance of that part of Wellington street, which will have a fine effect from the approach at Dufferin bridge.

Another object of great national value and deep scientific interes is the Government

GEOLOGICAL MUSEUM,

in which may be found, technically arranged, classified an labelled, all the rich, abundant and varied mineral productions o the Dominion, comprising a vast collection of great diversity an attraction. In addition to the very complete and comprehensiv aggregation of mineral products in this Museum, there is also large assortment of native fossils and curious specimens of organi remains; together with a vast variety of aboriginal curiositie appertaining to the past and present history, and illustrative o the manners and customs of several tribes of the North America Indians.

In addition also to the admirable display of our national resource already mentioned, many fine and valuable zoological and ornitho logical specimens have recently been added to the Natural Histor department, which will materially enhance the pleasure an interest of a visit to the Museum. To the general non-scientific as well as to the scientific visitor, the Natural History branch when expanded into larger proportions, will prove exceedingl interesting. This attractive feature of the Museum is becomin more prominently conspicuous every day, under the hands of thoroughly skilled taxidermist.

THE FISHERIES EXHIBIT

in Victoria Hall, O'Connor street, is possessed of many and varie attractions. It contains preserved specimens in natural form colour and size, admirably executed, of all the fishes indigenou to the waters of the Dominion of Canada, embracing each species from the white whale down to the smelt and the mudpout. The collection also includes a splendid display of stuffed and preserved specimens of the many fish-eating birds of Canada, from the bald eagle down to the kingfisher, together with several specimens o fish-destroying animals, comprising seals of various kinds, otters minks and fishers. This exhibit is of especial importance and value, shewing, as it does, the nature, extent and localization o the food-supplying fishes of the Dominion. It is visited every day by hundreds of people from all parts of Canada and the

United States, and has proved as great an attraction here as it was some years ago, at the great exhibition of the fish products of the world in London, England.

A feature of special interest in the rooms of the Exhibit, is the large collection of primitive hooks, lines and other implements of rude construction, used by the aborigines of British Columbia in the capture of fish of various kinds. When contrasted with the nets, lines, hooks, artificial baits and other highly finished artistic appliances for taking fish, on exhibition in the same department, some idea may be formed of the difficulties encountered by the savage and untutored natives of the country in the art of supplying themselves with food.

Objects of peculiar attraction in the Fisheries Exhibit are the white whale, the giant salmon and immense lake trout, the sharks, the horse mackerel or tunny, the large sturgeons, maskinonge, pike and the varied and complete collection of trout, bass, and lake whitefish.

A mention of the attractions of the Exhibit would not be complete without a reference to the machinery and appliances for the hatching of fish to be seen there. The various stages of the interesting process of artificially producing fish, from the first deposit of the ova to the development of the live fish, can be observed ; and the sight is an exceedingly instructive and interesting one.

MAJOR'S HILL PARK,

situated on the banks of Rideau Canal and the Ottawa River, in the centre of the city, is a delightful place of summer resort. It is covered by many fine trees, some of which are the old forest trees, and all of the others have been planted by the Corporation. It is well laid out in winding walks and avenues, and profusely planted with flowers and shrubs of great variety and beauty. This beautiful place of recreation is largely made use of in hot weather by the citizens of Ottawa. Its dry and elevated position and cooling shade renders it peculiarly conducive to enjoyment and health.

THE RIDEAU FALLS,

situated about one mile eastward from the centre of the city, on the direct line of the Street Railway, formed by the dividing bran-

ches of the Rideau River, are exceedingly beautiful cascades. The waters of the Rideau fall into the Ottawa at two points of confluence, occasioned by a large island which divides the stream about eight hundred yards from the latter. During the period of high water in Spring, these falls, tumbling perpendicularly down a rocky descent of between forty and fifty feet, are singularly grand and picturesque in appearance.

THE CHAUDIERE FALLS,

spanned by an iron suspension bridge, which was completed in the year 1844, is a cataract of great depth and volume ; the greater part of the water of the river rushing with concentrated force through a comparatively narrow channel. The view of this magnificent waterfall from the suspension bridge, always interesting, during the spring freshet is grand beyond conception. From the perpetually ascending clouds of spray it has derived its French name *Grande Chaudiere*, or the "Big Kettle." Travellers who have seen this beautiful cataract in its most turbulent aspect, have pronounced it second only to Niagara.

THE WATER WORKS

Pump House is well worthy of inspection. It is situated in Victoria Ward, at the west end of the city. The gigantic pumps are driven by water power, and are of great strength and capacity. the hydrants supply effective streams at great pressure to subdue fires. The supply of water, which is ample, and of the purest description, even without filtration, is taken from the Ottawa River above the Chaudiere Falls, far out in the current; and by analysis has been proved singularly free from ordinary impurities, which render the water supply in many places unhealthy.

CARTIER SQUARE,

the property of the Dominion Government, situated near the Rideau Canal, in the centre of the city, is a beautiful piece of ground, containing in a large square about twenty-four acres. On the easterly end of it the DRILL HALL, an immense brick building, stands. The Hall, as well as the Square, is used by the military organizations of the city for the purposes of drill and parade, and by permission of the Government, for sports and games of various



kinds. The square has been broken up and levelled, and the improvements which have been completed, make it one of the finest public squares in Canada. It has been planted on all sides with two rows of trees, which, after a few years, will afford a pleasant shade to visitors and spectators on occasions of public display.

LANSDOWNE PARK,

the property of the Corporation of the City of Ottawa, is in the immediate vicinity of the city. It is picturesquely situated on the banks of the Rideau Canal, and is thus conveniently accessible by water as well as by land. On these fine grounds are held the annual Exhibitions of the Central Canada Exhibition Association, and the Park is a popular pleasure resort for picnics and other festivities. One of the finest half-mile racing tracks in Canada has recently been constructed on the grounds, which can be advantageously utilized for the display of saddle and carriage horses during the Exhibition.

Foremost amongst the interesting and attractive sights within the city limits, and the adjacent city of Hull, are the

GIGANTIC SAW-MILLS,

all driven by the waters of the Chaudiere Fall, which have been judiciously utilized for manufacturing purposes by the construction of dams and piers at the head of the current.

When in full operation, cutting at night, under the powerful and diffusive blaze of the electric light, these mighty lumber manufacturing establishments present scenes of bustle, brilliancy, and magnificence unequalled, as evidence of enterprise, in any part of America. The vast piles of lumber by which they are surrounded, notwithstanding the millions of feet shipped every week, furnish ample proof of the extent and importance of this great staple trade.

THE PUBLIC BUILDINGS

are the City Hall (which cost $90,000), Registry Office, Central and Primary School buildings in the different wards; By, Wellington, Victoria, and Ottawa Ward Market houses, and the Fire Stations, connected by electric telegraph for fire alarm purposes, with the Central Office at the City Hall. The Collegiate Institute and

Model and Normal School buildings are centrally situated on Cartie Square. The Educational Institutions are all costly, commodiou and ornamental structures.

The fine cut-stone COURT HOUSE AND GAOL, and REGISTR OFFICE of the County of Carleton, are situated on Nicholas street in the City of Ottawa, and are an ornament to the locality.

There are twenty-six churches, many of which are costly and impos ing in architectural design and appearance, in the City of Ottawa Denominationally described, they are as follows: 1 Baptist, 1 Con gregational, 1 Catholic Apostolic, 1 German Lutheran, 5 Episcopal 5 Methodist, 5 Presbyterian, and 7 Roman Catholic. The greate number of these churches are of elegant construction. Notably so the Basilica, Roman Catholic; St. Andrew's, Knox and Bank stree churches, Presbyterian; the Dominion, Eastern and Western, Me thodist; the St. Patrick's, St. Joseph's and St. Jean Baptiste, Roma Catholic, and Christ's Church, English. Christ's Church cost $45 000; the Dominion Methodist, $50,000; St. Andrew's, $60,000 Knox Church, $52,000; St. Patrick's, $42,000; Baptist, $30,000; S Jean Baptiste, $40,000. A large and costly Salvation Army Barrack has recently been erected on Queen Street. There is a fine Oper House and also a Concert Hall on Albert Street.

THE DUFFERIN BRIDGE,

so named in honor of Lord Dufferin, a former popular Governor General of Canada, is a noble iron structure connecting Rideau and Wellington streets: and the Sapper's Bridge, thus designated from having been built by the Royal Sappers and Miners in 1828, in its enlarged and widened form, forms a commodious connecting link between Sparks street, the "Broadway" of the metropolis, and Rideau street, which runs easterly to the Rideau River.

There are many other fine ornamental buildings in the City of Ottawa, which may, without invidious discrimination, be mentioned. Amongst them are the Post Office, the several Bank edifices, Stadacona Hall, the French-Canadian Institute, the Russell House, the Grand Union, and the massive brick block recently erected by Mr. McLeod Stewart on the corner of Sparks and Elgin streets.

There are, also, at present in course of construction in various parts of the city, many substantial and elegant private residences, which cannot be particularized in a sketch of this discription, but

which, when completed, will add materially to the house accommodation of Ottawa, which is now rather limited when contrasted with the constantly increasing demand.

The journey from OTTAWA TO MONTREAL, by steamer, is one of the most delightful trips imaginable. The scenery all along the route is grand and picturesque in the extreme, embracing woodland, mountain and valley, the beautiful Lake of Two Mountains, the Lachine Rapids, and the celebrated Rapids of the Long Sault, sixteen miles in length, near which is the site of the old fort of palisades, where the heroic young Frenchman, Dulac Desormeau, with his sixteen companions, made their determined and successful stand against the dreaded Iroquois, and nobly sacrificed themselves to the last man in saving Montreal and Quebec from a long preconcerted attack of the enemy.

The route from OTTAWA TO KINGSTON by the Rideau Canal passes though a fine agricultural country, and takes the tourist though the fascinating labyrinth of green islands and suspassingly beautiful scenery of Rideau Lake, many parts of which are almost equal in magnificence to the far-famed and unrivalled scenery of the Thousand Islands of the St Lawrence.

Amongst the outlying attractions in the vicinity of the City of Ottawa,

RIDEAU HALL,

the residence of His Excellency the Governor-General, occupies a conspicuous place, not only on account of its pleasant and commanding site, but also in consequence of its being the stated abode of Her Majesty's Representative. Rideau Hall is situated upon a rising ground in the midst of a beautiful grove of fine old forest trees, in the village of New Edinburgh. It was built for a private residence by the late Hon. Thomas Mackay, and has been enlarged and improved since it came into the hands of the Canadian Government. The grounds attached to the Vice regal residence contain about eighty-seven acres, a portion of which is covered by a grove of fine trees. The cost of the place together with the improvements effected, amounts to about $300,000. Rideau Hall has been occupied by the representatives of Her Majesty since the time of Lord Monck. The occupants immediately prior to the arrival of Lord Lansdowne, were the Marquis of Lorne and Her Royal Highness the Princess Louise. The present occupants are Lord and Lady Stanley of

Preston. Lord Stanley is the successor of Lord Lansdowne. The largest and finest cricket ground in the Dominion is on this domain, which, by permission, also has frequently been used for challenge inter-provincial games of lacrosse.

NEW EDINBURGH, *

built on the south bank of the Ottawa, and running southerly along the easterly side of the Rideau River, is a neat and thriving village of considerable extent, with a population of about 2,000. It is the easterly terminus of the Ottawa City Street Passenger Railway. The latter fact has added materially towards the building up and prosperity of New Edinburgh. This village contains many fine private residences, and the greater number of the streets have been planted with shade trees, which add much to the beauty of the place.

STEWARTON, *

on the southerly border of the city limits, is a nice little village containing many fine private dwellings. Its southerly limit is the north bank of the Rideau Canal. The central station of the Canada Atlantic Railway, together with the offices and freight storehouses of the line, are located in Stewarton. The village contains now about four hundred inhabitants, many of whom belong to the Civil Service and to the business classes of the city,

ROCHESTERVILLE, *

is a large and prosperous village bounding the westerly limit of the City of Ottawa, on the easterly border of the Township of Nepean. It is growing rapidly, and must have, at present, about four thousand inhabitants.

VIEWS.

Perhaps in no part of Canada, excepting from the Citadel of Quebec, can such a magnificent prospect of rock, river, mountain and waterfall be seen as that from the north-westerly point of the Government Hill. In a grand panoramic spectacle spreads out and expands before the eye the Chaudiere Falls, the Iron Suspension

* New Edinburgh, Stewarton and Rochesterville are now included in the city limits.



Bridge and the green islands above on the west ; the great Laurentian chain of mountains—walling in as it were, the green fields and comfortable homesteads of the County of Ottawa—on the north ; and the City of Ottawa on the south and east. Taken as a whole, in its wonderfully pleasing scenic effect, this view is one of the grandest imaginable.

The look-out towards the north from the Dufferin bridge between upper and lower town is of great and varied attraction. When the eye wanders across the waters of the Ottawa river, lingers for a moment on woodland and verdant field, and finally rests with sublime delight upon the sun-tinged summits of the blue ridges of the mountains beyond, the tourist may travel far before he can see a scene more beautiful.

The view, however, which eclipses all others in expanse and natural grandeur here, is that which can be enjoyed from the main tower of the Parliament Buildings. From this lofty point, with the aid of a strong field glass, the varied and interesting features of the country for twenty or thirty miles in all directions can be brought within the scope of vision ; and even mountains forty miles northward up the Gatineau River can be distinctly seen. It is not too much to say that this is one of the grandest views in Canada, if not in America.

THE CITY OF HULL,

situated on the north shore of the Ottawa river, opposite the City, is the Capital of the County of Ottawa, in the Province of Quebec It contains about six thousand inhabitants ; and participating with Ottawa in the unrivalled water power of the Chaudiere, it is the seat of a great lumber manufacturing interest. Hull is an older place than Ottawa, having been quite a village before old By-town was founded.

MINERAL SPRINGS.

The far-famed CALEDONIA SPRINGS, about fifty miles from Ottawa, can be reached from here by boat in a few hours. These powerful mineral springs are now celebrated the world over ; and hundreds of invalids, especially those suffering from rheumatism and derangement of the digestive organs, visit them every summer. In connection with the establishment commodious and first-class hotel accommodation can be had.

Situated within twelve miles of the City of Ottawa, on th direct line of the Canada Atlantic Railway, are EASTMAN'S SPRING which, so far as mineral waters of great medicinal excellence an variety are concerned, with a little capital and enterprise might b transformed into a health-seeking resort almost equal to Saratog The saline, sulphur and gas springs here are unsurpassed for volum and strength, but the most unaccountable thing in connection wit this place, so singularly rich in the medicinal elements of health i that its great natural advantages and resources hitherto have neve been sufficiently utilized and developed.

Within four miles of this city, on the Montreal macadamized roac is also a well tested and powerful sulphur spring, which is muc resorted to by the people of Ottawa.

The famous BORTHWICK SALINE SPRINGS are also within seve miles of the city, in the township of Gloucester. The waters of thi celebrated mineral spring are largely used by the people of Ottaw and other places and have been found a potent aid to health and constitutional regularity.

THE UPPER OTTAWA RIVER

is a favorite route for tourists from the City to the River Mattawa and thence to the beautiful Lake Nipissing. In no part of Canada can scenery of more varied, attractive and gorgeous beauty be found than along this delightful region. The Chaudiere Fall, already mentioned, the Remoux Rapids, and the Duchesne Rapids at Britannia, are each distinguished by features of wildness and grandeur of the most romantic description. The Duchesne Lake stretches from Britannia to the surpassingly beautiful cataracts at Fitzroy Harbor. Here the waters of the entire river are precipitated over a mumber of falls, broken by green islands at intervals from shore to shore. These picturesque water falls are called "LE CHATS," from the fact that some old *voyageurs* to the North-west many years ago, discovered a number of raccoons on the shore when they landed there with their canoes, *Chats Sauvage*, (*anglice*, Indian cat), being the French name for raccoon. At the head of the Chats Rapids, the great Chats Lake commences, from two to four miles in width and about thirty miles long—like the Lake of Two Mountains, the Duchesne and other great stretches, being simply an enlargement and lateral expansion of the Grand River.

The frequently recurring rapids and cataracts along the Upper Ottawa, the green-wooded banks and flourishing farms, with the blue mountains in the back ground on the north, add interest and variety to every mile of the journey. The scenery of the Upper Ottawa must be seen to be understood and appreciated. The country, on both sides of the river, is dotted over with beautiful lakes (full of fish) from an acre in size to large bodies of water twenty or thirty miles long, which supply the numerous large tributaries of the Ottawa River.

THE GATINEAU AND DU LIEVRE.

In addition to the above, the tourist, as well as the speculator can find, amid the matchless scenery and mineral wealth of the Gatineau Valley and *Riviere du Lievres*, sufficient to interest them. The former in the shape of rapid, cataract, lake, mountain and valley. The latter in inexhaustible deposits of phosphate, plumbago, iron, mica, asbestos and other valuable minerals. The mineral resources of these parts of the Province of Quebec, so near the City of Ottawa, are singularly rich, varied and abundant; while the lakes therein are teeming with gray trout, from five to fifty pounds in weight, speckled trout of all sizes, black bass, pike, pickerel, perch, whitefish and other kinds; and in the forest may be found Moose, Cariboo, Virginian deer, bears and all the furbearing animals and birds of the duck and grouse families indigenous to this part of Canada. Some of the lakes in the Gatineau region, such as the Thirty-one Mile Lake, the Pemachongo, the Kakabonga, and the Whitefish Lake, within easy access to sportsmen, are immense sheets of clear water, studded over with green islands from an acre to hundreds of acres in extent, stocked with fish in great abundance. Many of the rapids and cascades on the du Lievre and Gatineau present scenes of wild, romantic and weird grandeur, which cannot be imagined unless seen.

This is a part of the adjoining Province of Quebec, which, when accessible by means of railway communication, will be yearly visited by tourist and sportsmen. Nothing can surpass the wildness and grandeur of the rapids and chutes on this most turbulent of Ottawa's tributaries, nor can anything be more picturesque and beautiful than the mountains, valleys and lakes to be met with on all sides as the traveller penetrates into the heart of the wilderness. The people of Canada, those who can afford it, travel across oceans and traverse deserts to distant lands in search of the beauties of

nature ; while within the boundaries of their own country scenery of unsurpassed magnificence remains unexplored. Canadians need scarcely wander from home in search of scenes worthy of their highest admiration ; for no part of the world is richer in scenery of natural beauty calculated to please the eye and excite the senses than their own land.

When the contemplated Gatineau Valley Colonization Railway shall have been completed to the River Desert, many scenes of hitherto unrevealed beauty, and mines of wealth of astonishing richness and extent will be brought to light.

Under the impetus which must naturally be given to trade, agriculture, commerce and manufactures by the many railroads converging here, it may be reasonably assumed that, within a few years this city shall have expanded and increased in wealth and importance to such an extent as fully to justify the foresight and wisdom of Her Majesty the Queen in its selection as the Seat of Government. The rise and progress of Ottawa, if slow compared with the spasmodic, and not always healthy advance of other places, has been sure, certain and permanent, and altogether free from features of an ephemeral character.

In its splendid agricultural surroundings, and in its internal capacities for large manufacturing industries, Ottawa has been singularly fortunate ; and no one possessing any foresight can now entertain a doubt that it is destined to become ultimately one of the most important cities in the Dominion. Its outskirts on all sides are bordered by fine flourishing villages, which will, doubtless, in a short time become incorporated within its limits, adding materially to its size, wealth and population.

When the decision of Her Majesty, by the advice of the Imperial Government, made Ottawa the Capital of Canada, the St. Lawrence and Ottawa, between here and Prescott, was the only line of railway terminating within the limits of the city. Ottawa had then but few over ten thousand inhabitants ; and its trade was comparatively insignificant contrasted with what it is to day. Within the city limits are now located the termini of four railroads, which are doing a prosperous carrying trade, not only in passengers and ordinary freight, but also in the transportation of sawn lumber and other manufactured timber to the Montreal, Quebec and United States markets.



In addition to its natural advantages, being the seat of the Federal Government, gives to the City of Ottawa a prestige, and invests it with a degree of importance which it could not have otherwise attained.

The residence here of Her Majesty's Representative, and the annual additions to the population during the winter Sessions of the Legislature, impart a lively attraction to society and give a briskness to the local trade of a highly beneficial character.

During the present summer Ottawa has been visited by a larger number of tourists from Europe and the United States than in any previous season, many of whom have visited the most interesting spots in the Ottawa Valley, and have expressed themselves both surprised and delighted with what they saw.

THE COUNTY OF CARLETON,

in the centre of which Ottawa is situated, is, perhaps, financially speaking, the most independent municipality in the Dominion. The greater portion of the land comprised within the boundaries of the metropolitan county is of the richest and most fertile description. It has an area of 415,291 acres, with a population of about 50,000. It is traversed by many fine macadamized roads, and the various railways coming into Ottawa pass through it. Surrounded by such tracts of lands as above described, rich in all the elements of agricultural prosperity, the city of Ottawa has a specially favorable location. In dealing with the question of its future as a city, it is not an easy matter to exaggerate. Its march must be onward and its destiny is assured.

CANADIANS IN THE UNITED STATES.

(From the *Canadian Journal of Fabrics*).

It is said that there are a million Canadians in the United States at the present time, but this may be an exaggeration. American statistics show that from 1820 to 1886, 1,047,080 people had gone to the States from Canada, but doubtless many of these were not natives of Canada, but European emigrants, and many others were of the class who migrate periodically to the States and return home, such, for instance, as lumbermen and laborers. There may be 800,000 Canadians now in the United States, and these fill all walks of life from the factories of New England to official posts at Washington. A large part of this element in the States is composed of the French Canadians chiefly employed as factory hands in the textile trades of New England. The emigration of French Canadians began practically at the close of the civil war, when labor was scarce. Till that period native workmen and Irish immigrants were chiefly employed in the cotton and woolen mills, but it was found that the French Canadians not merely were contented with low wages, but were industrious, teachable, and not given to contention and strikes. From that to the present day they have been sought by American mill owners, until in 1885 in the state of Massachusetts alone, out of a total population of 1,942,141, there were 147,352 Canadians, of whom 64,513 were French Canadians and 40,839 Nova Scotians. In 32 cities and towns of New England having a total population of 417,877, there were 88,653 Canadians, of whom 53 held public offices, 549 were merchants and professors, and 2,014 tradesmen. Out of a population of 50,000, Fall River has 11,000 Canadians, Lowell has 11,000 out of 60,000, Biddeford, Me., 6,500 out of 12,200, Manchester, N.H., 12,000 out of 38,000, Cohoes, N.Y., 6,000 out of 20,000, and so on. In 1874 the first paper devoted to the interests of the French Canadians and published in their language was started at Worcester, Mass., and now about 16 papers in the French language are published more or less exclusively in the interests of French Canadians in the various States. In 1885 the French Canadians of Massachusetts had 30 churches, and the public records show that only one in 40 was ever charged with disorderly conduct or crime. To the town of Marlborough, for instance, the Canadians contribute one-fifth of the population and only one-tenth of the criminality. The following figures of the

increase of Canadians of all classes in Massachusetts since 1865 will give an idea of the growth of the Canadian population in the New England States generally:

Canadians in Mass.,	1865.....	32,390
" "	1875.....	86,022
" "	1885.....	147,352

The French Canadians have swarmed chiefly to New England in the east and to Michigan and Illinois in the west; while the English Canadians have spread pretty evenly over the Union. Comparatively few of the latter have gone south, but Illinois and California have received large numbers. Chicago has probably 40,000 Canadians, many of whom are among the most prominent business men; while Southern California has received Canadian settlers by the thousand annually in the last five or ten years, until several new districts and villages have grown up with Canadian names. The editor of the *Canadian-American*, a journal published in Chicago in the interest of Canadians in the United States, states that there are 35,000 Canadians in Michigan, 45,000 in Minnesota, 38,000 in Wisconsin, 50,000 in Iowa, 40,000 in Dakota, 50,000 in Kansas, 25,000 in Nebraska, and about 100,000 on the Pacific coast. He estimates the total number of Canadians now in the States at 1,200,000, the majority of whom live west of the Alleghanies.

Coming to individual Canadians who have made a name for themselves in the States, it would be curious and interesting to make a catalogue of those whose talent and energy have met a generous recognition among our neighbors. A few occur to the writer, but doubtless many others will be remembered by the reader.

Erastus Wiman, president of the North Western Telegraph Co., and one of the best known financiers and railroad men of the States, known in a still wider sphere as an advocate of the "Commercial Union" of Canada and the States, was born at Cooksville, Ont., and received his practical education in Canada.

J. J. Hill, the owner of the St. Paul, Minneapolis and Manitoba Railway, is a native of Ontario.

Professor Simon Newcomb, LL.D., who has for years been in charge of the American Nautical Almanac, which is as near perfection as mathematical reckoning can make it, is a Canadian by birth, being a native of Nova Scotia. A contemporary declares that "he is one of the few choice men who will stand at the head of living astronomers." He received the gold medal of the Royal Astrono-

mical Society for his tables of Uranus and Neptune, and has had several honors from foreign scientific societies. The late Dr. Kirk, the high-souled editor of *Lippincott's Magazine*, was a Nova Scotian.

(Here follows a list of thirty other Canadians prominent in various walks of life in the United States).

It is a noteworthy circumstance that the three most widely known publishers of cheap popular literature in the States,—John W. Lovell, and George Munro, of New York, and the Ogilvies of Chicago, —are Canadian born.

A paragraph in a contemporary gave the names of thirty Canadians who were returned as senators or representatives in the recent elections in the States.

These are but few names taken at random, scarcely touching on the numerous list of Canadian educationists now occupying important appointments in various institutions, and numbering such men as J.G. Schurman, professor of Philosophy in Cornell University.

It is mentioned as a fact highly creditable to the Canadian Americans that in Minneapolis a city of 123,000, Canadians contribute eight per cent. of the population, and only two and a half per cent. of the criminality. A recent issue of the Chicago *Canadian-American* furnished a list of over 150 Canadians who had attained distinction in various ways, these being more or less personally known to the editors. As samples of the work of Canadian pioneer settlers in the States, the following memos given by "Laclede" in the Montreal *Gazette* will possess historical interest:—"The City of Milwaukee has just erected a statue to the memory of its founder. That founder was a French Canadian—Solomon Juneau. Juneau built the first ship and the first court house. He was the first Post-master and the first Mayor of Milwaukee. He was born in the neighborhood of Montreal, on the 8th of August, 1793, and started West when quite a boy. Ten or twelve of the chief cities of the West and South were founded by Canadians—a fact of importance, the memory of which has been preserved by Mr. Joseph Tassé, of this city, in his valuable work entitled "Les Canadiens de l'Ouest." Detroit owes its rise to Lamothe-Cadillac; Duluth, to Dulud; Dubuque, to a pioneer of the same name; St. Joseph, Mo., to Robidoux; St. Louis, to Laclede-Ligueste; Galveston, to Blenville; Mobile and New Orleans, to Iberville; and Chicago, St. Paul, Louisville, Vincennes, to Canadian settlers."



THE GREATER HALF OF THE CONTINENT.

A TRIBUTE TO CANADA,

BY ERASTUS WIMAN.

Re-printed from the North American Review, January, 1889.

It is not a little singular that, in this country, and in this period of the easy acquirement of general information, so little is known of the greater half of the continent of North America, included within the British possessions. It shows, for instance, how little is known even of the broadest generalities, when the statement is received with surprise, if not incredulity, that, excluding Alaska, Canada is a larger country than the United States. Yet such is the case; for the United States, prior to the purchase of Alaska, was included within 3,036,000 square miles, while Canada stretches out to fill 3,470,392 square miles. It would perhaps help to convey some conception of the magnitude of Canada when the statement is made that, in area, it comprises very nearly forty per cent. of the entire British Empire, the extent of which is recalled by the boast that the sun never sets on British possessions. A still further rather startling statement in relation to Canada is, that, including the great lakes which encircle it and which penetrate it, and the rivers of enormous size and length which permeate it, in it is found more than one-half of the fresh water of the entire globe. Such broad generalities as these may well excite the attention of the people of the United States, who, in view of the magnificent proportions of their own country, have been unconsciously led to believe that it comprises all that is worth having on the continent.

The impression of magnitude, so far as Canada is concerned, is, however, always accompanied by a conviction, born of ignorance, that the Dominion is a region of frost and snow; that it is a sterile and inhospitable waste—simply a section of the North Pole. This conclusion confirms the conviction that Canada is of little or no use to the United States, so rich in resource, so varied in climate, and so self-contained and independent of the outside world. The vast number who thus look upon the northern half of the continent fail to remember that, by the purchase of Alaska, and its subsequent development, testimony was afforded as to the exceeding value of

regions very many degrees farther north than the average of Ca ada, and that to-day, so full of promise is the prospect for this late acquirement of the United States, that no money payment, howev large, would have the faintest hope of acceptance for its cession t another power. It is doubtful if, in any part of the United State a greater return has been realized in proportion to the capital ir vested or the effort put forth, than that which has rewarded th enterprises in the most northern section of the United States.

So far as the climate of Canada is concerned, it should never b forgotten that, within the parallels of latitude which include th greater portions of the Dominion, the development in the Unite States has been the most marked. Indeed, no developmen in the history of the world is more rapid than the growth of th commerce of the Great Lakes, which to-day act as a barrier, divid ing the two countries, but which, under happier conditions, shoul be the bond that united them. Reference to the extent of this lak commerce brings out another startling comparison, which, creatin surprise, shows after all how little the average man knows even o his own country, much less of the regions alongside of his ow land. This statement is, that the tonnage and value of product which passed through the Sault Ste. Marie Canal, compressed with in seven months of the season of navigation of 1888, equaled tha which passed through the Suez Canal in the entire year. Here, ir the northern part of North America, between two inland lakes, with only one shore of these developed, a commerce has been created which equals that between two oceans, whose traffic is almost as old as the universe, and contributions to which are made from every clime and country of the globe. Recall, also, the fact that the water communication of the lakes is competed with by the most perfectly equipped railway systems of the age, while the commerce of Suez is practically without a competitor. This development of the States and cities bordering upon the great lakes, and the growth and productive forces which have been set in motion, not only on the shores of these inland seas but on the wide stretches of country tributary to them, is a testimony to the advantages of a northern climate that it is impossible to ignore. So magnificent is this growth, so significant is the lesson that it teaches, that, so far as Canada and its climate is concerned, a true appreciation of her vast value is, from the advantage of her location, at length beginning to dawn upon the minds of observant men. The place that



she should occupy, as the greater and northern half of the continent, can be no longer denied to her. A proper estimate will show Canada to be a country having few equals in extent, none in riches of resource, in accessibility, ease of interior communication, and, notwithstanding the smile that lightens up the face of the reader, none superior to her in the advantages of climate.

Perhaps the best test of climatic advantage is found in the ability to produce, in the largest quantities, and of the best quality, the most valuable and the most universally used article of commerce. Considered in this respect, there is nothing surpassing the article of wheat, which may be said to be the basis of civilized existence. The steady movement toward the north of the wheat-producing regions of this continent is remarkable. Wheat is a plant so delicate and so easily affected by frost and adverse conditions, that it might be supposed to be cultured safely only in the most temperate zones. Yet the movement of the wheat-producing areas towards the North Pole has been as steady as the movement of the needle in the compass in that direction. Within the memory of many readers of this publication, the Gennessee Valley, in the State of New York, was the great wheat-producing region. So much so was this the case that Rochester was named the "Flour City," from the number of its flouring mills, and the activity of its commerce in that direction. Since then it has changed the manner of spelling the word which designates it, and though it is still called the "Flower City," it is because of the development of the nursery and seed interests, which so adorn and benefit it, and the rest of the country. No longer is Rochester the centre of the wheat-producing areas. Westward these took their way, first to the valleys of the Ohio, then to the prairies of Illinois and Iowa, until now, in the most northern tier of States and territories, is found the great sources of national wealth in the production of this great cereal. The milling activities of Minnesota, the marvelous railroad development in the Northwest, both toward the west and north, and more recently toward the east, for the special accommodation of this flour and wheat trade, tell the story, that so far as climatic advantage is concerned, wheat has found its greatest success in States to the extreme north. Is it to be supposed that there is something magical in the 49th parallel that bounds Minnesota towards the north? Its steady trend in this direction for so many hundreds of miles makes it highly probable that, beyond it, wheat should be produced, largely and profitably

Indeed, this is certainly so; for it so happens that, north of Minnesota line, and within the Canadian territories, are wheat ar possessing all the advantages of the regions to the south, but richness, fertility and extent infinitely greater. It would be startling statement to make, as showing the advantages of the mu derided Canadian climate, that even in its extreme northern la tudes, the Dominion possesses a greater wheat-producing area th does the entire United States; that the soil of this wheat area richer, will last longer, and will produce a higher average of bet wheat than can be produced anywhere else on the continent, if n in the world. Wheat is known to have been grown in the vicini of numerous Hudson's Bay Company's stations for twenty consec tive years, without rotation, without fertilization, and annually pr ducing crops averaging thirty bushels to the acre!

If, therefore, the production of this most valuable of cereals the truest test of climatic advantage; if the tenderness of the whe plant in its cultivation is a delicate standard of conditions, as really is, it is submitted that the prejudice as against the Canadia climate should, in the first place, prevail no longer than it prevai against the climate in similar latitudes in the United States, whe the greatest success has been achieved; and, second, that th advantages which the northernmost portions of Canada possess ov even parallels far to the South, should be recognized. These adva tages are found in the often forgotten circumstance that climate much more the result of altitude than it is of latitude. Accordin to Humboldt, Europe has a mean elevation of six hundred an seventy-one feet, and North America a mean elevation of seve hundred and forty-eight feet. It is a significant circumstance th the Canadian portion of North America has an altitude of onl three hundred feet. In the extreme northwest of Canada, the fallin off from the height of land toward the vast body of water known a Hudson's Bay is shown in the fact, that from even within th Minnesota line the rivers all begin to run towards the north. Th low altitude, in its influence upon the climate, is second only to th effect of the marine currents, which are singularly favorable t Canada. These influences are shown in the startling fact that th mean temperature of Hudson's Bay is three degrees warmer durin the winter than that of Lake Superior; and that it is on the souther and western shores of Lake Superior where the most importan development of American enterprises has taken place,—develop

ments that have yielded in lumber, in iron and copper, riches of greater magnitude than produced elsewhere in the country; and within parallels of latitude included in this lake, an agricultural development more remarkable than that elsewhere in the world. The moderating influences of vast bodies of fresh water that never freeze over are well known. In the great chain of lakes that surround Canada, and the vast number of lakes and rivers that diversify her surface, there is a fresh water area of one hundred and thirty thousand square miles, and, as above stated, comprising nearly one-half of the fresh water of the globe. The effect upon the climate of this vast aggregation is most beneficial, so that in altitude, and in other influences that mitigate the extreme northern location of the land, there are found considerations of the greatest weight. These influences are shown in the warmer climate of the great territory of Alberta, which lies directly north of Wyoming, from the latter of which and into the former, stock is being regularly driven at the beginning of each winter, because of the presence within the Canadian border, the year round, of an abundance of grass. The experience of last winter showed conclusively that while throughout Manitoba and the Canadian northwest territories the winter of 1888 was not excessively severe, so far south as Iowa and Nebraska the severest cold was felt, and as far east as even New York in the famous blizzard, which never found its equal even in Winnipeg, the most northern of Canadian cities. It is true that in the northwestern portions of Canada the winters are long; that the frost is severe and continuous; but it is equally true that the climate is dry and invigorating.

But aside from this continued severity of the climate in the winter, there are compensations and advantages in the summer months in the extreme northern region of Canada which must not be ignored. For instance, what would be thought of a device that should provide, underneath the whole surface of a vast and fertile wheat-producing area, of a well-spring of moisture, that should continuously exude, and feel the delicate tendrils of roots that the wheat plant sends down into the earth for sustenance? Yet this is precisely what nature has provided in the thousands of square miles of wheat areas of the Canadian northwest. Ages of long winters, continuous and often severe cold, have produced a frost line in the earth far down below the surface, which being thawed out during the summer months is full of force. What seems, at first glance, a

barrier to the productive powers of nature, is, in this case, found t be contributory in the highest degree to man's advantage. For th vast area of ice, far enough below the surface to permit the growt of plants, holds in suspense and readiness for the land above, th needed element of moisture, constant and assured, which in othe regions comes only in the rains and dews that fall from the sky— supply uncertain and uncontrollable. But there is still anothe advantage in these northern wheat-fields of Canada, incident to th climate; and that is, that while these latitudes imply long winte days, they equally imply the longest days in summer. Thus, there is an average of two hours per day more of sunshine during the period of the growth of wheat in the Canadian northwest, than is vouchsafed in any other locality where wheat can be produced. Not only is two hours of sunshine in each day an inestimable advantage, but the sun is stronger and more forceful at this period, and in this region, not only helping rapidly forward the ripening process, but the heat is continuously sufficient to cause an exudation of the moisture from the ice in the ground beneath. So that, in this far north land, despised in the minds of many for its cold and sterility, conditions unite to make it the most productive, and the most valuable of all the wheat lands upon the continent. It would seem as if a conjunction had been formed by the heavens above and the earth beneath to illustrate, in the highest degree, the productive forces of nature, in regions where man least expected this development. It so happens, also, that the soil which enjoys these advantages of moisture beneath, and long, forceful rays from above, is particularly rich and inexhaustible. Lord Dufferin, an observant and reliable authority, said that throughout his whole journey of weeks through the Canadian northwest, he was constantly reminded of the English kitchen gardens in the vicinity of London. Cauliflowers grow large enough to serve for three meals for an ordinary family, while potatoes four and five pounds in weight are nothing extraordinary. The average crop of wheat in 1887, in Manitoba, was thirty bushels to the acre, while nowhere else on the continent did it exceed twenty bushels to the acre, and in Minnesota and Dakota did not average more than fifteen bushels. A mere handful of settlers in Manitoba produced in that year, a surplus of twelve millions of bushels of wheat, seven millions of barley, and two millions of bushels of potatoes—the latter crop being a failure so great in the States as to command throughout the greater portions



of the year a rate as high as $1 per bushel, while at points of production within Manitoba they could be had for one-eighth of that price. It is true that early frosts in August of the present year have partially injured the crop of 1888, and that there is this contingency always present in the northern regions; but early frosts are equally dangerous in Minnesota and Dakota, while this year, as far east as Massachusetts, there was serious damage done. There is no locality but has its disadvantages with its advantages; but taking all the circumstances in view, it may be very well claimed for these northern wheat-producing regions that they are full of the greatest promise, as being in the line of the steady movement north of this most valuable product, and that they cannot fail to have a most important influence in the world's future supply of the staff of life.

But it must not be inferred that the climate of Canada is represented by the regions to the extreme north which have just been referred to. The Dominion, from its vast extent, as has been truly said, "possesses all the climates of Europe, from the Mediterranean to the Arctic Ocean, as might be expected, seeing that it extends from the latitude of Rome, in Italy, to that of the North Cape, in Norway, and is of almost equal area." The gulf stream, in the Atlantic coast, and the Japanese current in the Pacific, are both singularly favorable to Canada. In the Province of British Columbia the thermometer in the summer months ranges from eighty degrees to ninety degrees, while in winter, the cold rarely goes below twenty-two degrees. On the Atlantic the climate of Nova Scotia, and New Brunswick is in no respect less desirable in winter than that of Massachusetts and Maine. St. John, the chief city of New Brunswick, is in the latitude of Milan, Lyons, and Venice, and the whole province is within parallels which include Belgium, Holland and the German Empire, where populations are most dense. Indeed, for more than half of the summer the maritime provinces are most delightful resorts, as shown in the steady stream of summer tourists that are settling in even north of Mount Desert in Maine. In Ontario the climatic conditions created by the practical encirclement of the great lakes are especially favorable, and such stretches as are included in the Niagara Peninsula, and those bordering upon Lake Erie, force themselves upon the attention of the student of North America as among the most favored spots on the whole continent. So far as climate, then, is concerned, there is no one thing in all the catalogue of advantages which Canada possesses

that is of greater value; for, in its variety, it favors the production of numerous cereals and crops, and, in its forcefulness and vigor it stimulates the best efforts of its population. Malte Brun said of these regions: "Everything is in proper keeping for the development of the combined physical and mental energies of man. There are to be found at once the hardihood of character which conquers difficulties, the climate which stimulates exertion, and the natural advantages which reward enterprise. Nature has marked out this country for exalted destinies!"

The immeasureable content with which the average citizen of the United States contemplates the fact that, as between the Atlantic and Pacific, there are no stretches of territory that do not contribute to his greatness, can equally be shared by the Canadian. But the American has limitations on the north by a line drawn at the St. Lawrence and the Lakes, and along the forty-ninth parallel, against which his commerce beats as against an impenetrable wall, and like a wave rolls back upon itself. A night's journey from Boston or New York, and the limit of his boasted areas towards the north are reached, two nights and a day, even from Chicago, in the centre of his territory, and the ground to the north covered by the trade of that great city is exhausted. Not so with the Canadian. Not only does his territory stretch two hundred miles further out into the Atlantic, on the Nova Scotia coast, than the average of the United States—not only does it then stretch across a vast continent of untold wealth to the Pacific, on the coast of British Columbia, but extends as far north as the Arctic Ocean. Take in the stupendous figures included in these measurements. Adopting the eighty-fifth degree of longitude as a centre, Canada stretches west to the one-hundred and thirtieth degree, and east to the forty-second degree—forty-five degrees on one side and forty-three degrees on the other. North and south the Dominion stretches from the fifty-first degree of latitude, south to the forty-second degree, and north to the frozen sea. George Johnson, the accomplished head of the statistical department of the Dominion government at Ottawa, whose disposition and ability to furnish the fullest information regarding Canada are unequalled, makes some comparisons regarding the size of the Dominion that are very instructive. He says:

"It is difficult to afford an adequate conception of the vastness of this country, England, Wales and Scotland form together an area of 88,000 square miles; you could cut forty such areas out of Canada. New South Wales contains 309,175



square miles, and is larger by 162 square miles than France, continental Italy and Sicily. Canada would make eleven countries the size of New South Wales. There are (in extent), three British Indias in Canada, and still enough left over to make a Queensland and a Victoria. The German Empire could be carved out of Canada and fifteen more countries of the same size.

In the light of such comparisons, the statement made in a previous page, that Canada comprises forty per cent. of the area of the entire British Empire, is not so incredible as at first sight appears. Judged by standards of American areas, the comparison was quite as interesting. Thus, the province of Ontario, the fairest land of all the North American continent, is larger than the six New England States, with New York, New Jersey, Pennsylvania and Maryland, by twenty-five thousand square miles. Ontario, extending over ten degrees of latitude, and twenty degrees of longitude, the single province, covers an area larger by ten thousand square miles than Ohio, Indiana, Illinois and Michigan combined; larger than Iowa, Minnesota and Wisconsin by eleven thousand square miles. The basin of the Hudson's Bay comprises two million square miles, in which are the fertile plains of the Saskatchewan Valley, measuring five hundred thousand square miles, and which, according to Lord Selkirk, are capable alone of supporting thirty millions of people. That he was right in this contention is proved by the indications of the enormous productive forces of this region since developed; and that a European area, similarly situated east of the tenth degree of longitude, comprehends very nearly the whole of England and Ireland, the northeast corner of France, the whole of Belgium and Holland, and the greater part of the valley of the Rhine.

The vast expanse of Canada may be judged by the extent of her rivers and bays. The St. John, in New Brunswick, the largest river on the Atlantic coast south of the St. Lawrence, is five hundred miles in length, and is navigable for two hundred and thirty miles. The St. Lawrence, one of the noblest of the great rivers in the world, has a length of seven hundred and fifty miles, entirely navigable. The Ottawa, which is a mere affluent of the St. Lawrence, joining it six hundred miles from its mouth, is in itself five hundred and fifty miles long. The chain of great lakes is familiar to all who look at the map, but not so, to the north. In an almost unknown land, are the lakes Shebandowam, and Rainy Lake and river, a magnificent body of water, three hundred miles broad and two hundred miles long. The Lake of the Woods, too, is almost

unknown outside of Canada, yet is a vast stretch of water of almost marvellous beauty, especially its westernmost portion, of 80 miles, consisting of land-locked channels—a lacustrine paradise. Then comes the Winnipeg River, of which Lord Dufferin said: "Whose existence in the heart and centre of the continent is itself one of nature's most delightful miracles, so beautiful and varied are its rocky banks, its tufted islands; so broad, so deep, so fervid is the volume of its waters, the extent of their lake-like expansion, and the tremendous power of its rapids." Here empties the great Red River of the North, starting from the northern portions of Minnesota, and the equally great Assiniboine, one five hundred miles and the other four hundred and eighty miles in length. Far beyond these is the Lake Winnipeg, a fresh water sea 300 miles long, from the northwest angle of which starts the Saskatchewan. The entrance to this noble river has been called "the Gateway of the Northwest," for here is a navigable stream, 1,500 miles in length, flowing nearly due west and east, between alluvial banks of the richest soil. Reaching the Rocky Mountains by this stream, beyond this range are the Athabasca and the Mackenzie rivers, the navigation of the latter alone exceeding 2,500 miles, while the Frazer River and the Thompson River to Vancouver are streams of great magnitude. This enumeration of principal streams will give some faint idea of the vast areas of land through which they flow. But no better idea of magnitude can be formed of the extent of Canada than by the contemplation of the Hudson's Bay. This bay would seem like a projection of Providence for the good of mankind, by which is introduced into the heart of the continent an ocean in itself, midway between the great Atlantic and Pacific oceans. Fancy a bay so long as to extend from New York to Chicago, so wide as to extend from Washington to the lakes, projected like a huge tongue of sea into the land. What would remain of the fairest part of the United States? Yet this is the proportion of the Hudson's Bay, say 1,000 miles long and 600 miles wide, running from the north into the heart of Canada, carrying with it enormous riches in sea wealth for the supply of fish food so greatly benefiting, if permitted, the prairie States to the south.

Having almost exhausted the space allotted, by a description of the climate and extent of Canada, the reader must be carried rapidly forward to a consideration of the marvellous resources which this northern half of the continent contains. Incidentally,



in describing the climate of the northwestern portions of Canada, allusion has been made to the agricultural possibilities of that region. There are comparatively few portions of Canada, however, but possess great possibilities in this direction. The Province of Ontario, which will be recalled as covering so vast an area, is peculiarly rich in this respect. The excellent statistician of the Ontario Government, Mr. Archibald Blue, at Toronto, says of his native province:

"But Ontario has something more to boast of than broad expanse. It has a fertile soil, an invigorating climate, vast forests of merchantable timber, treasures of mineral wealth, and water power of limitless capacity. It has extensive areas which grow a better sample and a larger yield of the staple cereals than any other portion of the continent; and it has more extensive areas not yet brought under cultivation which may be converted into grazing fields of unsurpassed richness, suitable for the production of the best qualities of butter and cheese."

In a report on the trade between the United States and the British Possessions in North America, made by J. R. Larned, of the United States Treasury Department, in 1871, it was observed that

"Ontario possesses a fertility with which no part of New England can at all compare, and that particular section of it around which the circle of the Great Lakes is swept forces itself upon the notice of the student of the American map as one of the most favored spots of the whole Continent, where population ought to breed with almost Belgian fecundity."

Another American, whose worthy eminence none will dispute, has also described Ontario. The Hon. David A. Wells, in the stately pages of the *North American Review* of many years ago, wrote as follows:

"North of Lakes Erie and Ontario and the River St. Lawrence, east of Lake Huron, south of the forty-fifth parallel, and included mainly within the Dominion Province of Ontario, there is as fair a country as exists on the North American continent, nearly as large in area as New York, Pennsylvania and Ohio combined, and equal if not superior to those States as a whole in its agricultural capacity. It is the natural *habitat* on this continent of the combing-wool sheep, without a full, cheap, and reliable supply of the wool of which species the great worsted manufacturing industries of the country cannot prosper, or, we should rather say, exist. It is the land where grows the finest barley, which the brewing interests of the United States must have if it ever expects to rival Great Britain in its present annual export of over eleven million dollars worth of malt products. It raises and grazes the finest of cattle, with qualities especially desirable to make good the deterioration of stock in other sections; and its climatic conditions,

created by an almost encirclement of the great lakes, especially fit it to grow *men*. Such a country is one of the greatest gifts of Providence to the human race, better than bonanzas of silver, or rivers whose sands contain gold."

It is unnecessary to go into detail as to the advantages which the provinces of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island claim, because space will not permit, except to say that no country in the world possesses a more favorable variety of climate, better soil, a more thrifty or a more industrious people than these provinces, many of them possessing great geographical advantages. This is especially the case with Nova Scotia. This province projects out from the mainland into the Atlantic Ocean like an immense wharf, being almost surrounded by tidal waters, no portion of the interior being at a greater distance than thirty miles from the coast. All of her coasts are indented and provided with fine harbors, accessible at all seasons of the year. Its geographical position causes a variation of the climate of the country of great advantage, and as a source of supply in fruit, oats, potatoes, and numerous other agricultural products, should be of the greatest value to the densely populated manufacturing centres of New England.

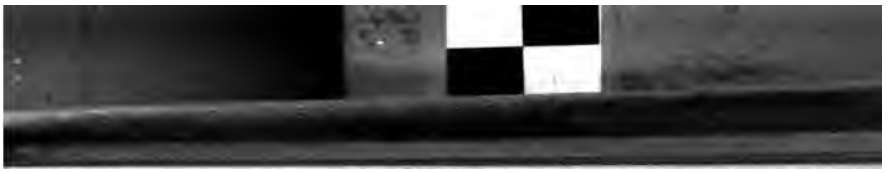
But, great as may be the agricultural possibilities of the Dominion of Canada, and the wealth in her vast wheat-producing areas that these may yield at the bidding of man, it is in the natural resources of the country, that a still greater promise is found. In the matter of the fisheries alone, Canada stands unrivalled. Very few realize the vast stretches of coast line along which Canada controls the greatest fisheries in the world. Bounded as the Dominion is by three oceans, it has beside its numerous inland seas over five thousand five hundred miles of seacoast, washed by waters abounding in the most valuable fishes of all kinds. The older provinces of the confederation have two thousand five hundred miles of seacoast and inland seas, while the seacoast of British Columbia alone is over three thousand miles in extent! It is impossible to take these figures in and all that they imply without realizing at once the enormous magnitude of this interest. But it is not alone in the matter of extent of seacoast line that Canada has a surplus in fish wealth; but, in the extreme northern location which she occupies she possesses an advantage which is of immense value, and this is that the fish are not only better and firmer in northern climates, but that the supply of fish food, owing to the extreme northern location, is inexhaustible. As has been truly said by Mr. Harvey, "the

Arctic currents which wash the coast of Labrador, Newfoundland, and Canada, chilling the atmosphere and bearing on its bosom huge ice argosies, is the source of the vast fish wealth which has been drawn on for ages, and which promises to continue for ages to come." Wanting this cold river of the ocean, the fish which now crowd the northern seas would be entirely absent. Professor Hind says: "The Arctic seas and the great rivers which they send forth swarm with minute forms of life, constituting in many places a living mass, a vast ocean of living slime. The all-pervading life which exists here affords the true solution of the problem which has so often presented itself to those investigating deep sea fisheries, the source of food which gives sustenance to the countless millions of fish." The harvest of the sea has not yet been gleaned to the same extent as the harvest of the land; but this fact may be taken for granted, that of all the countries in the world, and of all the riches of these countries, nothing can be made more useful, in a higher form, toward sustaining life, or to a greater extent, than the vast wealth of the fisheries of Canada. They are practically inexhaustible, because the cold current of the north brings with it the food on which these fish thrive, and the supply is one that can never fail. The seacoasts of the Atlantic and the St. Lawrence on the east, the long stretches of the Hudson's Bay coast in the centre, and the three thousand miles of coast line of British Columbia on the west, are in themselves a great possession, while the fresh water fish of the great lakes of the northwest, especially in the supply of the prairie States, should be relatively as great a contribution to the sustentation of human life as are the supplies of cattle upon the plains.

In timber, Canada possesses a wealth of very great importance to the United States. When the wide stretches of treeless prairies which this country contains are recalled, and the rapidly disappearing forests within the United States, it is with a sense of satisfaction that one turns to the northern half of the continent, containing as it does the finest forests and the greatest supply of this most essential element of human protection and comfort. Within the catalogue of the woods of Canada, there are sixty-five species of forest trees, including nineteen of the pine family, while the space covered by timber within the Dominion is something enormous. Excepting the great triangular prairie east of the Rocky Mountains, lying between the United States boundary and a line drawn from the Red River

to the upper Peace River, the whole of Canada, up to the northern limit of the growth of trees, presents one vast forest area, except where it has been cleared by the hand of man. It is needless to further dilate upon the enormous value which this area is to the country to the south. It is sufficient to say that the source of supply for the next hundred years for the progress of the United States, lies largely within the Dominion; and that no estimate of wealth, on the one hand, or of advantage and possible convenience on the other, is possible, so far as the United States is concerned. Fully one-half of the lumber consumed in many Western States is now derived from the Canadian forests, climbing as it does over a wall in the shape of a duty of twenty per cent. The protection thus afforded practically operates as a stimulant for the destruction of American forests. The hard and white woods in Ontario, almost within the sight of the border, are of inestimable value in the manufacture of furniture; and there are enormous supplies of the beautiful bird's-eye maple, black birch, oak, basswood, black ash, and other highly ornamental woods, which, in this country, are of great value for the highest grade of furniture and interior decoration.

Perhaps of all the surprises which the average American encounters in discussing the wealth of Canada, nothing will startle him to a greater degree than this statement:—That no country in the world possesses so much iron as Canada, in no land is it so easily mined, and nowhere is it quite so accessible to manufacturing centres. This is a statement which no doubt will challenge contradiction, and it is to be regretted that the space is too small to describe at length the location and precise advantage which the iron supply of this Greater Half of the Continent would afford to the United States. Take the instance at New Glasgow, in Nova Scotia, where, within a radius of six miles, there are found deposits of iron ore of the highest quality, equal to that of any other portion of the world, side by side with limestone, chemically pure, in the immediate presence of coke in abundant quantities, from seams thirty feet thick, lying directly on a railway and within six miles of the Atlantic Ocean! Could there by any possibility be a combination more fortuitous than this? Throughout Nova Scotia there are deposits of ore of the greatest possible value; but, in Quebec, and especially in Ontario, the value of the iron deposits is something enormous. Near the city of Ottawa there is a hill of iron called the Haycock mine, which would yield an output of one hundred tons per day of ore for one hundred



and fifty years without being exhausted. On the line of the Ottawa, on the St. Lawrence, in the Eastern townships, on the Kingston and Pembroke Railway, on the Central Ontario Railway, through Lake Nipissing, in Lake Winnipeg on Big Island, and on Vancouver's Island, there are enormous deposits of ore, all possessing this singular advantage, of almost a freedom from phosphorus. It has been truly said that "what the devil is to religion, that phosphorus is to iron." The peculiar advantage of the Canadian ore in this respect is sufficiently demonstrated by the fact that, in the face of a duty of seventy-five cents per ton, this iron is being steadily introduced, for the purpose of mixing with other ores, at Joilet, Ill., at Pittsburg, Pa., and at other points. A market such as the United States would afford, if it were free, and the introduction of enterprise and capital, would create for these deposits the same development and the same value that have followed the activity in the Vermillion, Menominee and Gogebic regions. These latter deposits are almost within sight of Canada, and are but the edge of the great Laurentian range or belt of minerals, which, starting on the Labrador coast, covers the vast area of Canada, paralleling the St. Lawrence and the great lakes, till they find an ending in the Algoma district—a locality that has been aptly described as a great treasure house of minerals, waiting only the touch of American enterprise, and stimulated by an American market, to yield results far exceeding those of any mineral development on the continent.

Coincident with the presence of these great deposits of iron ore, are discoveries of even greater importance in copper and nickel, and in other metals hitherto nameless but of surpassing value. The copper development at Bruce mines, and especially and recently at Sudbury Junction, on the north shore of Lake Superior, is likely to be even more profitable than that of the famous Calumet and Hecla mines on the south shore of the same lake, whose payments of thirty millions of dividends on a capitalization of two and a half millions of dollars, is a realization beyond the dreams of avarice. Already Ohio capitalists have invested over a million of dollars on the line of the Canadian Pacific Railway in these deposits. The development of nickel, of which there are only two or three known deposits in the world, is of great significance; while in gold and in silver, especially the latter, very excellent success has rewarded the efforts of the prospectors. Perhaps the most marvellous yield of silver that the world has ever seen was Silver Islet, within the Cana-

dian border, on the Lake Superior shore, where, for a space of two or three years, an output was realized that enriched the owners with a rapidity equalled only by dreams in the "Arabian Nights." In British Columbia immense quantities of gold are known to exist, and the fact that over fifty million dollars worth has been mined from only a dozen localities, hardly yet developed, is full of the deepest significance, as indicating what yet remains in that distant region to reward the adventurous effort of the denizens of this continent.

But it is not alone in these prominent metals that Canada is rich in natural resources. In phosphates, she possesses enormous quantities of the purest character. No country in the world needs fertilizers more than large portions of the United States, and no country is better able to supply them than Canada. Analysis shows that Canadian phosphates contain phosphoric acid up to forty-seven and forty-nine per cent., equivalent to eighty to eighty-eight per cent. of phosphate of lime. No contribution to the wealth of the continent is of greater value than the development of the Canadian phosphates. In asbestos, in mica, antimony, arsenic, pyrites, oxides of iron, marble, graphites, plumbago, gypsum, white quartz for potter's use, siliceous sand-stones for glass, emery and numerous other products, Canada possesses enormous quantities awaiting the touch of man. In the matter of lead, it is found in almost every province, especially in British Columbia, the lead ore there containing as much as fifteen and a half ounces of silver to the ton. The deposits of salt are the largest and the purest on the continent. Again, another surprise awaits the observer in that of the article of coal. Canada possesses the only sources of supply in the Atlantic and on the Pacific; and that between these two there are stretches of coal deposits amounting to ninety-seven thousand square miles! The magnitude of the interests involved in this question of the supply of coal, its contiguity and economy of handling, are of vast importance to the United States. It is significant testimony to the important position which Canada holds on the question of coal supply, when it is recalled that away down on the Atlantic, the manufacturing coal of Nova Scotia should without doubt supply the manufacturing centres of New England, at a minimum of cost; while midway across the continent, in wide stretches of territory of the lowest temperature, supplies should be drawn from the sources which Providence has placed within the Canadian border, and, still further, that, on the distant

shores of th Pacific, San Francisco and contiguous cities should at this time be drawing their supply of artificial he t from the mines of British Columbia, and paying a tax to the overburdened treasury of the United States of seventy-five cents a ton !

And now, having most inadequately set forth some of the plainly marked features of the greater half of the North American Continent, it remains to be asked—What destiny awaits it all? It is true that the statements made herein are nearly all in the nature of surprises, but they take on this form mostly because of the hitherto good-natured indifference of the people of the United States in all that relates to Canada. But a change in this respect impends. The Canadian question forces itself upon the public mind of the United States for adjustment. Aside from serious complications, involving the relations with a European power, whose navy is the only means this country need fear, the circumstances of the hour make it imperative that at last a policy must be decided upon, continental in its character, and continental in its consequences. The strange sense of limitation that thus early in the history of the United States is felt, when there is no more new territory to occupy ; the necessity that exists for the widest field for supply of wants that brook no refusal, as in lumber, non-phosphorus iron ores, coal, fresh water fish in the North-west, phosphates, barley, and other products, either peculiar to Canada or geographically essential to local progress and local convenience ; the serious unsettled railway transportation problem, involving the possible discontinuance of the Inter-state Commerce laws, or the destruction of profit to the American railway systems running east and west ; the future destination of immigration, so as not to completely politically extinguish the American ; the worn-out but eminently dangerous fishery dispute ; the canal discrimination; a free St. Lawrence to supplement a free Mississippi,—all these are questions too important to remain in chaos. But, in addition to all these, is the necessity that arises out of the recent triumph of the Republican party, that a policy should actuate its leaders, commensurate with its greatness ; that its return to power should be signalized by achievements that will make its claim to continued confidence less insecure than it has hitherto been. The bitter lesson of defeat four years ago, and of narrowed majorities in significant localities since, will not be unheeded, especially if, in manufacturing centres, it can be made to appear that by opening up a market, continental

in extent, an outlet is afforded for the over-production which stimulant of protection has created. If this market can secured at the expense of that hated rival, the British manufactu so much the better for the purpose in view; for the frantic bid the anti-British vote will unfortunately still be necessary to politi party existence. Still another motive may be found for vast exp ditures, justified by the requirement of territory, in order to bege reduction of the surplus without the disturbance of the equilibri of taxation. All this catalogue of essentials in the present politi situation revolve around a policy which may have a Continer Unity for its aim, and which, narrowed down to practical polit involves an attempt on the part of the United States to shape future destiny of Canada. The considerations that surround t whole question are of a character most comprehensive, and they w doubtless, be discussed in this country with frankness and liberali It is submitted, however, that the almost universal conclus reached in the public mind, that Canada should form a part of Union, should be revised. Usually there are two parties to a b gain; in this case the parties number three,—the United Stat Canada, and Great Britain. Whether the latter is quite ready an extension over the entire continent, comprising 40 per cent. her empire, of the principles of the Declaration of Independa which in former years she struggled so vainly to defeat, may well doubted. Whether the people of Canada themselves, treated by mother country with all the affectionate consideration born of ex rience with her elder wayward daughter, are ready to sever the sl der ties that bind them to British connection, even for mate advantages, is by no means certain. Indeed, to many it wo appear that no revolution in sentiment could possibly be grea than the change which would be necessary to bring about a willi ness on the part of the Canadians to forfeit their loyalty, and many advantages which in their form of government they poss A political union, to those best informed, seems most difficult a distant. To these, however, a commercial union which, so far trade and commerce is concerned, would be just as advantageous among the early attainable possibilities.

ERASTUS WIMAN.

NEWFOUNDLAND.

Although Newfoundland does not form part of the Dominion of Canada, a sketch of the general features of British North America would be incomplete without some reference to this interesting island —"Britain's oldest colony." Newfoundland lies across the mouth of the Gulf of St. Lawrence, and contains an area of 40,200 square miles. A census taken in 1884 showed that it had a population of 193,124. Newfoundland became a British possession in 1583, Sir Humphrey Gilbert having landed in St. John's harbor in August of that year and hoisted the English flag in the name of Queen Elizabeth. It was not till 1614 that permanent settlements of fishermen were made on the island, and in 1763 the population was only 7,500. Up to the treaty of Utrecht in 1713 its ports were frequent scenes of warfare between the English and French. That treaty gave up to Britain the sovereignty of the island, but allowed the French to catch and dry fish on a certain part of the coast, now known as the "French Shore." This extends from Cape St. John round the north extremity of the Island to Cape Ray, a distance of 450 miles.

The legislative power is vested in a legislative council of 15 members appointed by the governor during pleasure, and a legislative assembly of 36 members elected by the people for four years. The executive council consists of 7 members nominated by the governor but responsible to the assembly. The right of suffrage is possessed by all male British subjects who have occupied dwellings, as owners or tenants, for two years or more preceding the elections.* The silver currency is dollars and cents, similar to that of Canada.

Owing to the energies of the people having hitherto been directed to the fishing industry, the natural resources of the country have been but little developed, and large sections of the interior have not even been explored. Only about 50,000 acres of land are yet under cultivation, though it is now becoming known that many districts of the island have a rich soil, capable of producing ordinary cereals, vegetables and fruit. In addition to oats, barley, peas and other grains the island produces fine potatoes, cabbages, turnips, and among its fruits are raspberries, strawberries, gooseberries,

*An act of the legislature passed in the present session (1889), introduces manhood suffrage. It extends the right to vote to every householder 21 years of age or over and to every man not a householder who is 25 years of age and over. It adds 12,000 voters to the list.

currants, and in some parts good apples and plums are grown. Th furs of Newfoundland are excellent in quality, and consist chiefly bear, wolf, martin, fox, beaver, wild cat and hare, with numbers caribou. Game birds abound in abundance in the numerous inlar lakes and the many bays with which the coast is indented. Th copper mines of Newfoundland are celebrated for their quality ore, several thousand tons being exported annually, and recent e plorations show that the land is rich in other minerals, among whic are sulphur, gypsum, iron, magnetic iron, nickel, coal, graphite, an lead. Large deposits of magnetic iron ore, yielding steel of the be quality, were found in 1888 close to the coal fields of St. George Bay, a district having plenty of timber and good agricultural lan The deposits of sulphur in Newfoundland yield 51.19 per cent. pure sulphur, or two per cent. more than the richest beds of Europe At the copper mines of Little Bay smelting furnaces have jus been erected for smelting the ore so as to export the copper in it pure state. Several lead and silver mines around Placentia Bay hav been purchased by a Scotch company who are now opening work

Railway construction is only needed to develop these resource At present only 100 miles of railway exist, connecting St. John's th capital, a city of about 30,000, with Harbor Grace and with Place tia. It is proposed to build two trunk lines one running from S John's to the northern coast at Hall's Bay, and the other across th southern part of the island to Cape Ray the nearest point to Nov Scotia and the St. Lawrence. The latter would be utilized in th future for quickening mail and passenger communication betwee Europe and America.

The revenue for 1887 was over $2,046,500 ; showing an apparen increase of $1,000,000, over the previous year ; but this may be ac counted for by the fact that the public debt has increased withi the year from $2,383,740, to over $3,000,000. The expenditure fo the year is set down at $1,738,200. The exports for 1887 show large increase in value over those of 1886, amounting to $5,397,40 as compared with $4,833,735, but still showing a great falling o from the figures of 1882-3-4. The imports amounted to a little ove $5,000,000, nearly $1,000,000 less than in 1886. Four-fifths of th exports consisted of fish to the value of $4,220,000.

The latest detailed reports of Newfoundland's trade to hand ar for the year ending Dec., 1886. The total imports for that year wer $6,020,035, and the exports $4,862,957. Of this the trade wit

Canada, United States and Great Britain amounted to the following sums:

	Canada.	United States.	Great Britain
Imports from	$1,937,605	1,672,810	1,911,001
Exports to	$195,245	288,453	1,212,715

The island imported from the British West Indies, goods to the amount of $290,241 and from Spain to the amount of $111,107. Of the exports the principal items were as follows: Portugal $1,221,872, Brazil $1,029,935, Spain $381,769, Br. West Indies $234,986, Italy $101,127, Gibraltar $84,252. As before stated Newfoundland's chief exports are in fish, and fish oils, of which the following formed the leading items: dry cod oil $3,431,987, cod oil $253,184, refined cod oil $10,214, pickled trout $3,678, frozen herring $11,740, Labrador pickled herring $56,288, pickled salmon $63,080, shore fish $44,672 tinned lobsters $145,491, whale oil $3,366, hair seal skins $272,656, seal oil $257,112.

Among the items of Newfoundland's imports from Canada are live stock about $90,000, meat and poultry $32,857, apples $13,145, butter $156,795, cheese $12,656, coal $152,495, flour $751,942, Indian meal $10,407, oats $38,462, oatmeal $8,000, peas $15,066, potatoes $15.400, bacon $5,900, biscuits $5,500, hardware $12,324, leather and leather goods $76,003, lumber $63,419, paper manf'rs. $6,336, wooden ware about $7,000, woolens and cottons about $23,200. In all these items except bacon, wooden ware, hardware, leather and cottons and woolens the imports from Canada exceeded those from the United States. The imports from Great Britain were largely in miscellaneous manufactured goods.

There were 106 vessels, (fishing vessels) with a total tonnage of 3,784 tons, built in 1886, on which the government paid bounties amounting to $11,352. There were on the shipping registers of the colony 2,044 vessels with an aggregate of 90,879 tons, of which 25 were steam vessels aggregating 5,291 tons. The arrivals and clearances during the year were:—

Arrivals	1285	vessels	149,338	tons
Clearances	1013	"	128,088	"
	2298		277,426	

O this total 1,285 vessels and 134,420 tons were in the trade done with Canada. The customs tariff of Newfoundland ranges from

10 to 25 per cent. and brings in a revenue of about $6 per hea
population. Duty is levied on nearly all imports, notable ex
tions being coal, fishing tackle and cordage, vegetables and prin
paper.

Besides the island, the colony of Newfoundland owns a stri
territory on the main-land north-east of Quebec. This is know
the Labrador coast, and reaches from Blanc-Sablon to Cape Ch
or Chudleigh, the interior boundary being a line drawn on longi
65 from Cape Chudleigh south to latitude 52° thence east on the
of latitude 52° to the point north of Blanc-Sablon. The resi
populati n is about 4,000 fishermen engaged in the herring,
trout and salmon fisheries. The climate is severe, and the coas
far as known, barren. Immense numbers of caribou abound in the
lands, and the furs of Labrador are the finest of the whole contin
These are bear, wolf, beaver, otter, mink, fox, lynx and wolver
On the Grand River, of Labrador, about 150 miles from the
coast, is a fall which is alleged to be 2,000 feet high. If this e
mate should be somewhat exaggerated, the falls would still be
highest in the world, the highest other falls—that of the Up
Prinzeau—being 1,148 feet, and the next, Verme Foss, in Roms
984 feet. The Indians have a superstition that these falls
haunted by spirits, and that no one can look upon them and l
Only two white men, agents of the Hudson Bay Co., have seen th

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The budget speech, presented at the legislative session of Mar
1889, shows that the revenue of Newfoundland for 1888 amoun
to $1,370,929, being greater than that of 1887 by $180,027, and t
largest ever received. The Customs revenue yielded $1,251,9
and as the revenue is chiefly from import duties, and there was
increase of taxation, it indicated a general prosperity of the peo
The public debt of the Colony on the 1st January, 1889, amoun
to $3,335,589. The loans placed upon the London market
1888, and forming a portion of this public debt, were raised a
premium of 2¼ per cent. in inscribed stock.

The estimated revenue for 1889 was put at $1,406,861.



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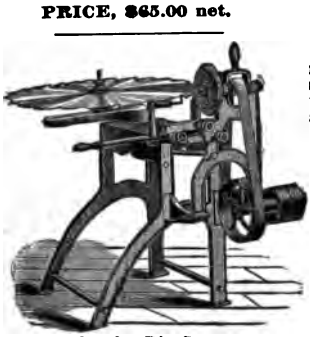
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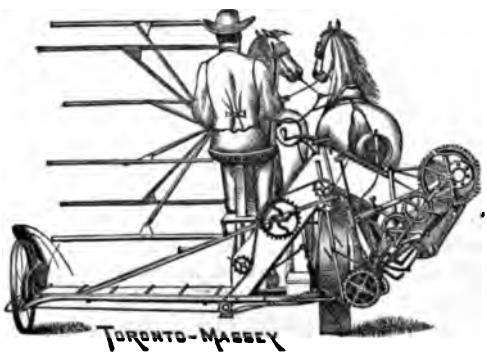
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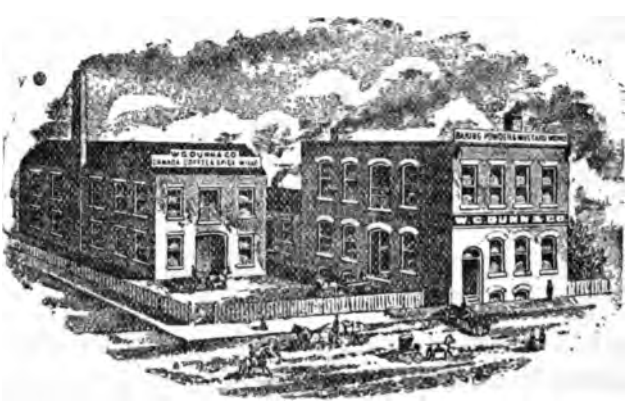
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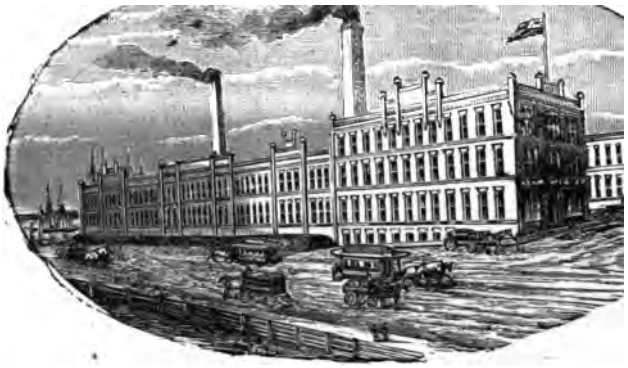
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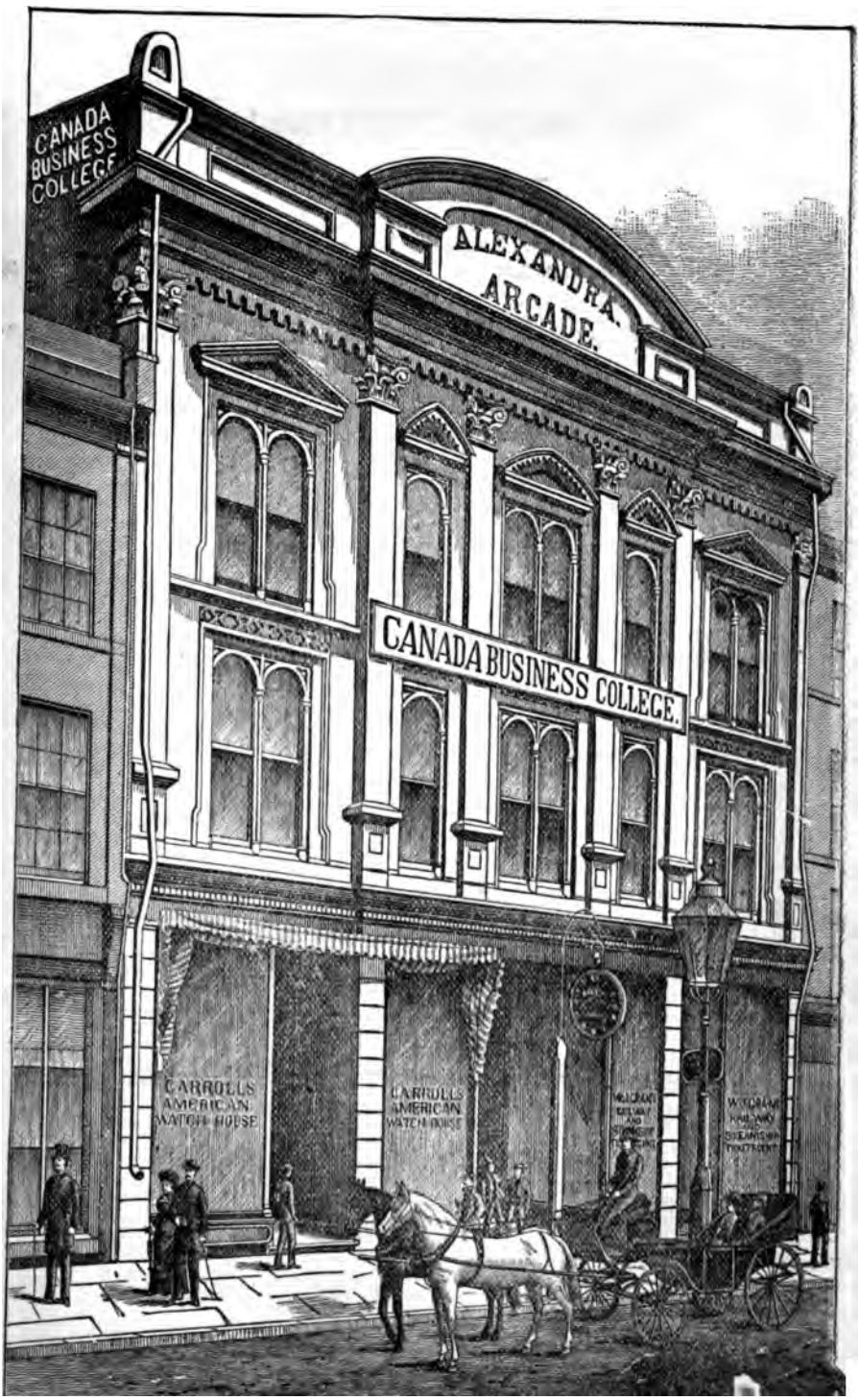
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The bindery department is located on the third flat, was added to the SPECTATOR a number of years ago, when its then proprietors found it necessary to have it in the building for the proper turning out of all classes of work; and by having it on the premises, do away with the inconvenience and risk of having it done by outsiders, as the majority of the printing offices are now compelled to do. From the time its machinery was first set in motion until the present, this department has steadily improved until to-day its capabilities for work range from the smallest pocket diary to the most ponderous ledger. The machinery now in use embraces the most modern and improved that is possible to procure, including ruling machines, numbering and paging machines, presses, wire-stitching machines for pamphlet work, and new tools for gilt finishing, which embrace all the newest and most fashionable designs for gilt ornamentation of book-covers.

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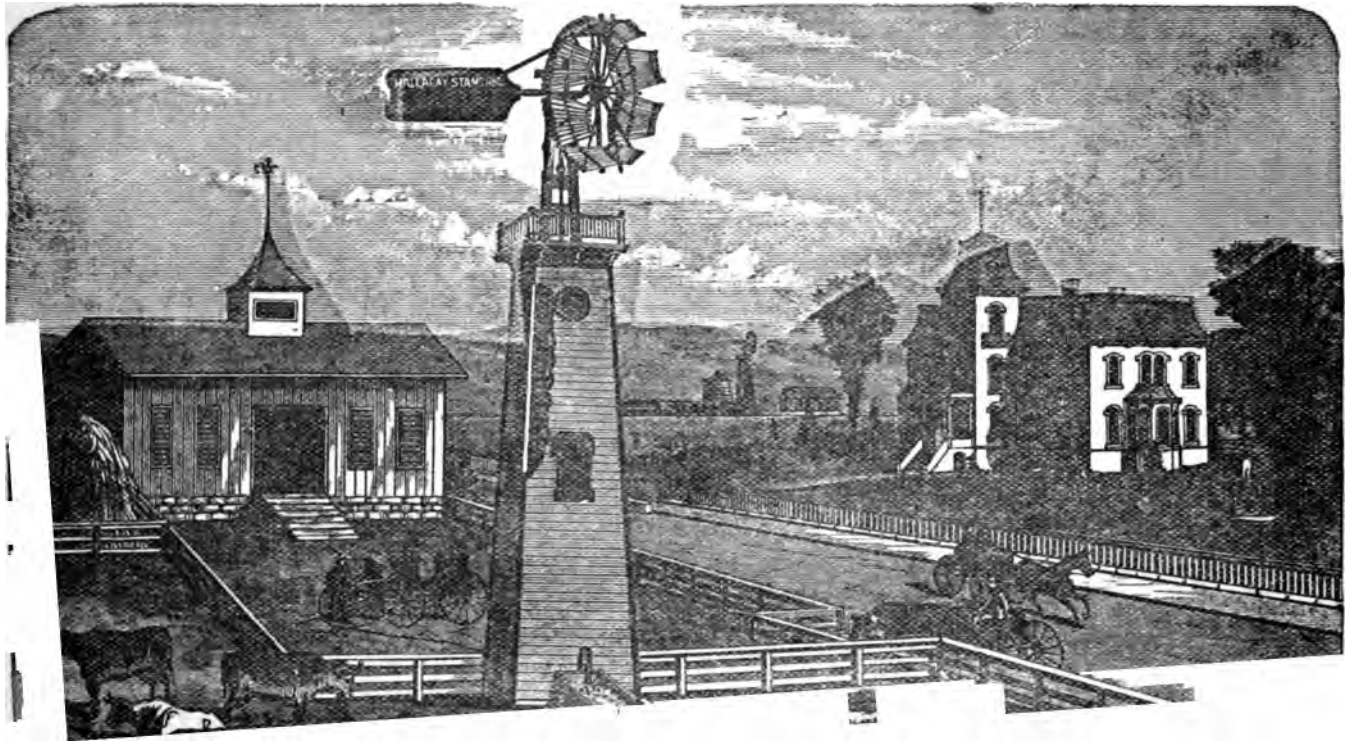
"The Ontario Pump Co. during years of steady progress towards the ideal windmill have placed their products in every province of the Dominion, and have recently shipped a number to foreign parts as being a cheaper and better article than can be procured in any country. Some of these have gone as far as the Cape Colony, Australia and Palestine, where they have met with the unqualified approval of the purchasers. Several have already been put up in Great Britain since the Exhibition has been open and the testimony of these new patrons is the best evidence foreign users can have of the superiority of these Canadian made Wind mills. The catalogue furnished by the Company goes fully into the details of the construction of the mills and it will be sufficient for our purpose if we say that they make both solid and sectional wheel mills. The sectional wheel mill on which plan all the larger ones are made, is so built that it regulates itself perfectly in wind at any velocity. And not only so, but while a surprising regularity of motion can be maintained, the power, or velocity, can be varied to suit the requirements of the user. This is done by regulating weights which act the same as governors to engines, governing the wheel by centrifugal force."

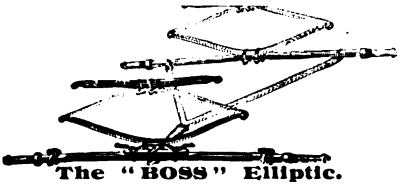
We give herewith an illustration of these appliances, which must one day become a part of the necessary equipment of every well-regulated farm. The view we present, while illustrating one of these excellent mills, also gives an idea of the plan of many of the thrifty homesteads of Ontario.

We understand they have recently had to double their capital, and contemplate building more commodious premises to enable them to keep up with the demand for their Mills. Among recent foreign orders were some for the interior of China and the Argentine Republic, South America. The Company in their large Illustrated Catalogue combine self-interest with instruction, and give many a useful hint, with valuable tables for farmers and others interested in their manufactures.

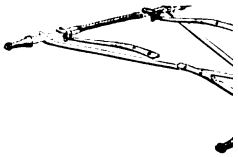
In order that our readers may avail themselves of this information by applying for a catalogue, which will be sent free on application, we give below the Company's address.

ONTARIO PUMP CO. (LITD.)
TORONTO, ONT., Canada.


HALLADAY STAMPING



The "BOSS" Elliptic.



The "COMMO



The HANDY FAVORITE.

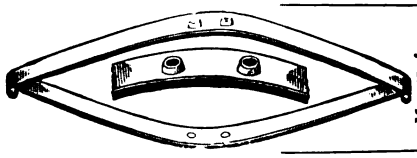
ARMSTRONG'S TWO-WHEEL

The "UNIQUE" Road-Cart.





The "DAIS



ARMSTRON

SINGLE AND DE

CARRIAGE SPRIN

Two Gold Medals and Diploma of Merit, Melbourne, Australia, and Diplomas awarded wherever shown, (Paris, 1878; Toronto, 1883; London, C

The John Abell Engine & Machine Works,

TORONTO, ONTARIO, CANADA.

✱ Headquarters for Steam and Horse-Power Threshing Outfits. ✱

THE "TRIUMPH" PORTABLE ENGINE, WINNER OF 13 GOLD MEDALS

The "Toronto Advance" Separator, TAKES First Place wherever introduced.

"Triumph" and "Advance" Traction Engines,
Straw-Burning Engines,
The "Paragon" Separator for Steam or Horse-Power,
The "Little Giant" Separator, with Tread Power,
Victor Double Huller Clover Machine.

SAW MILL MACHINERY.
Stationary Saw Mills, Portable Saw Mills, Shingle Machines.

FLOUR MILL MACHINERY.
Manufacturer of the Celebrated "WILLFORD and NORTHWAY" and "SILVER CREEK" MACHINERY.

BOILERS.
Marine, Land, Stationary Boilers of all descriptions.

The "Duplex" Feed Mill.—The best Grain Grinder in the world.
Send for Catalogue.

JOHN ABELL,
Toronto, Ontario, Canada.

Business Established in 1850.

JOHN A. BRUCE & CO.,

Seed Growers & Importers,

HAMILTON, ONTARIO.

Dutch Flower Roots in September. Prussian Dried Flowers and Grasses, for Winter decoration, in November. Clover, Timothy and other Grass Seeds kept in Stock at all Seasons.

DESCRIPTIVE AND PRICED CATALOGUES ON APPLICATION.

Banque Ville-Marie.

HEAD OFFICE, MONTREAL.

CAPITAL - - - - - - - - $500,000

DIRECTORS:

W. WEIR, President. J. G. DAVIE, Vice-President.
W. STRACHAN, GODF. WEIR, U. GARAND,
UBALDE GARAND, Cashier.

BRANCHES—Berthier—A. Gariepy, man.; Lachute—H. Frost. man.; Louiseville—F. X. O. Lacoursiere, manager; Nicolet—C. A. Sylvestre, manager; St. Cesaire—M. L. J. Lacasse, manager; St. Thérèse—M. Boisvert, manager; Point St. Charles (city)—M. J. E. Wall, manager; Hull—J. P. de Martigny, manager; Hochelaga (Montreal)—Geo. Dastous, manager.

Agents at New York—The National Bank of the Republic; Ladenburg, Thalmann & Co.; London (Eng.)—Bank of Montreal; Paris (France)—La Société Générale.

THE TUCKER
LETTER & DOCUMENT FILES
ARE THE BEST IN THE WORLD.



These Files, when drawn out, suspend automatically, admitting o easy and quick reference to papers.

The clamping device in the file, compresses the papers so that i will contain from ⅓ to ½ more papers than any other file.

This system received the highest awards whereve it was Exhibited.

WRITE FOR ILLUSTRATED CATALOGUE

—TO—

CRAYBILL & CO.,

WATERLOO, ONT

Agents Wanted.



Lightbound, Ralston & Co.,

IMPORTERS

AND

WHOLESALE ✲ GROCERS.

TEAS, SUGARS, SYRUPS, MOLASSES, FRUITS, CANNED GOODS, EAST AND WEST INDIAN PRODUCE.

✲PUBLISHERS AND PROPRIETORS✲

—OF THE—

DOMINION GROCER,

A MONTHLY JOURNAL DEVOTED TO THE BEST INTERESTS OF THE

GROCERY ✢ TRADE,

With reliable Market Reports and General Information valuable to all readers.

THE BEST MEDIUM

For advertising Grocers' Specialties.

Largest Circulation,

Reaching the Retail Grocery Trade from Halifax to Victoria and Vancouver.

EDITOR AND BUSINESS MANAGER,

H. ALLEN JACKSON,

P. O. BOX 518, MONTREAL.

XVIII.

W. STAHLSCHMIDT & CO., PRESTON, ONT

This well-known firm was established about six years ago, and commenced business in Preston, on the G.T.R., and in a compara t brief period of time, skill and enterprise was rewarded, and i was found necessary, in order to keep pace with the multiplying de mand for their goods, to rebuild. The result was the erection of on of the handsomest and most complete furniture factories in the Do minion. The building is of solid stone masonry, and is situated a the east end of the main street of Preston. Its dimensions are thre storeys high, each flat being devoted to a special branch of the man ufacture. Numerous outbuildings, including the drying kilns, sur round the main building.

The planing-room situated on the ground floor is a marvel o cleanliness, not a particle of dust is seen, and not a shaving is visibl to the naked eye, for the reason that every machine is fitted with a arrangement through which, by means of a fan, every atom of shaving and dust is carried overhead through the building and is dumped in the engine-house, right in front of the fire-hole, and is consumed a the expense of the coal industry. They recently put in a 70 hors power Wheelock engine. The other departments, which are reache by a steam elevator, are admirably arranged, the office furniture being kept distinctly apart from the other goods. The office is fitte up as only those can who are in the business, the floor being com posed of inlaid woods, forming a beautiful mosaic carpet that wil outlive any woven carpet.

Since this firm commenced the manufacture of office furniture their goods have been sent to almost every known part of the world and at the Colonial Exhibition held in London, Eng., a few years ago, some of the most expensive desks, secretaries and other office furnishings were bought for Germany, South America, France, and many other countries, and Her Majesty the Queen ordered a specia secretary which has since been made and shipped to its royal des tination.

From the thousands of jubilee gifts sent to his Holiness the Pope he has selected, for his own use, the magnificent office desk presented to him by St. Jerome's College, Berlin, Ont. This desk which was really a work of art, was turned out from the Stahlschmidt factory.

This firm are now shipping extensively to England and Australia, and are introducing their goods in Japan and South America.

About their exhibit at the Industrial Exhibition at Toronto a leading journal said:—It was by far the best show ever made, and many new improvements, attachments and additions have been made in that main piece of office furniture "the desk." There was the "Office King," "Rotary Desks," "Flat Tops," "Cabinet Secretaries." "Office Queen," "Mercantile Flat Top," "Double Rotary," and so many others of different patterns that it would be

impossible to enumerate them. Church and school furniture, perfect gems, are among the specialties of Stahlschmidt & Co. Mr. Stahlschmidt having for years been a teacher himself has made a special study of this subject, and has invented a number of most ingenious machines, enabling the firm to turn out more rapid and accurate work than probably any factory of the kind in America. As a consequence their products in these lines now go to all parts in the Dominion and to foreign countries as well.

BOOTH & SON,



Catalogue Fig. 105

COPPERSMITHS,

BRASS FOUNDERS,

METAL SPINNERS.

DEALERS IN

Plumbers' Supplies, Sanitary Earthenware, &c.

TORONTO, CANADA.

MONTREAL BRASS WORKS,

ROBERT MITCHELL & CO.,

PROPRIETORS.

MANUFACTURERS OF

GAS & ELECTRIC LIGHT FIXTURES,

GAS METERS,

Engineers', Plumbers' Gas and Steam Fitters'

BRASS GOODS

OFFICE,

COR. CRAIG AND ST. PETER STREETS.

FACTORY,

St. Cunegonde, MONTREAL.

XX.

CHARLES GURD & CO.,

Manufacturers of Belfast Ginger Ale and Ærated Waters, 41 to 45 Jurors Street. The firm of Charles Gurd & Co. have become distinguished for the standard character of their Belfast ginger ale, and ærated, medicated mineral waters, which have won their way to popularity with wonderful rapidity. The invigorating and refreshing power of their beverages make them doubly grateful as a pleasing, non-intoxicant drink, exhilarating and revivifying. The firm have the largest establishment in the Dominion, and supply a large demand from grocers, hotels and restaurants, not only in the city, but from other sections of Canada, where their ginger ale and ærated waters are held in high estimation. The premises used as the manufactory are large and spacious, and are fitted up with the latest improved machinery for meeting the demands made upon it. The productions of the firm have been brought into direct competition with those imported from English and American markets, and have received the highest awards—gold, silver and bronze medals and diplomas—at the exhibitions held in 1880-81-82 and 1884-86. Mr. Charles Gurd has been manager and proprietor of the present business for the past twenty-one years, and is an experienced chemist. The firm is the only one in America that has been awarded gold, silver and bronze medals for the superior quality of their goods, which comprise super-carbonated soda water, genuine Belfast ginger ale, seltzer water, potash water, Vichy water, Kissengen water, lemonade, ginger beer, super-carbonated Lithia water, chalybeatewater, ærated sarsaparilla, sparkling cider, &c., &c. The capacity of the works is 2,000 dozen per day, and the demand is far in advance of the supply. The firm is also wholesale agent and bottler for the well-known Caledonia natural mineral water.

THE FEDERAL LIFE ASSURANCE COMPANY.

Head Office, - HAMILTON, Ont.

Guarantee Capital, - $700,000.

FULL GOVERNMENT DEPOSIT.

Policies issued in 1888 for .....$3,335,000.
Insurance in force 31st Dec., 1888. ..... 9,930,987.

Assets over $200 for every $100 liability to the public.

Policies on Ordinary Level Premium Plans, the Popular Homans Plan, and the most perfect Endowment Bond.

F. F. DALLEY & CO.,

97½, 99, 99½ James St. N., HAMILTON,

And 18 Front Street West, TORONTO.

Manufacturers and Importers,

Blackings, Dressings, Inks, Mucilage, Essential Oils, Flavoring Extracts, Hair Oils, Castor Oils, Olive Oils, Sewing Machine Oils, Spices, Baking Powders, Toilet Soaps, Harness Oils, Patent Medicines, Perfumery, Drug and Grocers' Sundries, &c.

——ESTABLISHED 1846.——



A! MA THE LEADING CANADIAN COLLEGE ST. THOMAS, ONT. For Young Women

☞Nearly 200 STUDENTS last year. 17 Graduates and Certificated Teachers in Faculty. Graduating Courses with Certificates and Diplomas in Literature, Music, Fine Arts, Elocution and Commercial Science.

McLACHLIN HALL. The elegant new addition, costing $20,000, now open.

☞Thorough work. Low Rates. Good Board.

60 pp. Announcement FREE.

ADDRESS:

PRINCIPAL AUSTIN, B.D.

THE WILLIAMS PIANOS.

The pioneer in the manufacture of large musical instruments in Canada is Mr. R. S. Williams, head of the firm of R. S. Williams & Son, pianos manufacturers, Toronto. About thirty-four years ago he started as an organ maker, his business gradually growing till a piano branch was established, the firm being now exclusively devoted to the manufacture of the latter instruments. The Williams pianos became celebrated for their uniformly fine quality of tone and durability, and so steadily did their trade develop that in 1885 a large new factory was required, to which extensions have since been made. The factory as then built had a frontage of 150 feet on one street, and 100 feet on another, and was six storeys high; being fully equipped with lumber yard, drying kilns, and all the latest machinery used in the business. Since then the firm have erected a large factory at Oshawa, Ont.,

From Messrs. Williams & Son's establishment were sent a number of instruments to the great Colonial and Indian Exhibition, and the encomiums passed upon them there were not only a flattering testimony to the skill of the firm but calculated to reflect credit on the Canadian people. Among other instruments sold there, one was selected by Messrs. Dyson & Sons, tuners to the Queen, for use at Windsor Castle; while many eminent musicians expressed their appreciation of the rich tone of these instruments. The chief office and warehouse of this firm is 143 Yonge street, Toronto, Canada.

S. D. BIGGAR. LYMAN LEE, B.A.

BIGGAR & LEE,

Barristers, Solicitors, Notaries, etc.

OFFICES:

CANADA LIFE CHAMBERS,

HAMILTON, Ont.

☞ Special attention given to Collections and Investment of Funds.

Trusts Corporation of Ontari

OFFICE AND SAFE DEPOSIT VAULTS,

23 TORONTO STREET, - - TORONT

AUTHORIZED CAPITAL, - - - $1,000,00
SUBSCRIBED CAPITAL, - - - 600,00

THIS Company acts as **Executor, Administrator, Receiver, Guardian** or **Committ** and undertakes the execution of all manner of **Trusts** under any Deed, Settlem or Will, by original appointment or by substitution, for persons appointed to any these positions; also acts as **Financial Agent** for individuals and corporations in negotiations and business generally, including the Issue and Countersigning of Deb tures, Bonds and Securities, the Purchase and Sale of Municipal and other Debentu the Investment of Money and Management of Estates.

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Vice-Pres. The Hamilton Provident an Loan Society, Hamilton.

HON. S. C. WOOD,
Lately Treasurer of the Province of On Manager Freehold Loan & Savings Co.

SOLICITOR,

FRANK ARNOLDI, Esq.. (Howland, Arnoldi & Bristol, Toronto.

BANKERS

The Merchants' Bank of Canada,
The Canadian Bank of Commerce,
The Imperial Bank of Canada,
The Bank of Hamilton.

MANAGER,

A. E. PLUMMER.

THE

Merchants Bank of Canada.

Capital Paid Up, - - - - - $5,799,200
Rest, - - - - - - - 1,920,000

HEAD OFFICE, MONTREAL.

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Kincardine,	Prescott,	Windsor.

BRANCHES IN MANITOBA.

Winnipeg, Brandon.

BANKERS IN GREAT BRITAIN—London, Glasgow, Edinburgh and other points, The Clydesdale Bank (Limited). Liverpool, Commercial Bank of Liverpool.

AGENCY IN NEW YORK—61 Wall Street, Messrs. Henry Hague and John B. Harris, jr., Agents.

BANKERS IN UNITED STATES—New York: Bank of New York, N. B. A.; Boston: Merchants National Bank; Chicago: American Exchange National Bank; St. Paul, Minn.: First National Bank; Detroit: First National Bank; Buffalo: Bank of Buffalo; San Francisco: Anglo-Californian Bank.

NEWFOUNDLAND—Commercial Bank of Newfoundland.

NOVA SCOTIA AND NEW BRUNSWICK—Bank of Nova Scotia and Merchants Bank of Halifax.

A general Banking business transacted.

Letters of Credit issued, available in China, Japan, and other foreign countries.



The Canadian Textile Directory.

A reference book comprising all manufacturers and dealers in the textile and kindred trades of the Dominion. It embraces all the

Cotton Mills, Woolen Mills, Carpet, Jute, Flax, Felt and Rubber Factories, with capacity of Mill, kind of motive power used, description of goods made, etc.; manufacturers and miners of Asbestos; Paper Mills, with capacity, etc.; manufacturers of Clothing, Men's Furnishings, Ladies' Wear, Buttons, Feathers; Upholstering and Upholsterer's Supplies; Sails, Tents, Awnings, Window Shades and Wall Papers; Hat and Fur Factories; Manufacturers' Agents; Wholesale and Retail Dealers in all the foregoing branches; dealers in Raw Wool, Cotton, Furs, and other raw material; dealers in Dyestuffs and Chemicals; together with statistics, tables of imports and exports in all these lines; lists of Canadian Boards of Trade and Textile Associations. The Island of Newfoundland is also included.

This work forms a valuable advertising medium for those wishing to reach the manufacturers and dealers of Canada. Subscription $3 per copy; advertising rates given on application.

E. B. BIGGAR, Publisher,

Third Edition now in preparation. Fraser Building, Montreal, Canada.

XXV.

CANADIAN JOURNAL OF FABRICS.

(Formerly, Dominion Dry Goods Report.)

The only Journal in the Dominion exclusively devoted to

Textile and Kindred Trades,

Including Hats and Furs.

Large circulation among the

COTTON, WOOLEN AND OTHER TEXTILE MANUFACTURERS,

and in all branches of the Dry Goods trade.

ITS CIRCULATION IS DISTRIBUTED IN EVERY PROVINCE, AND IT IS UNDOUBTEDLY THE

Most Efficient Advertising Medium

FOR THESE TRADES IN CANADA.

Subscriptions $1 a year to Canada and United States; 4s. a year to Great Britain; 5s. to British Colonies and Foreign Countries, postage included.

For advertising rates and other information address

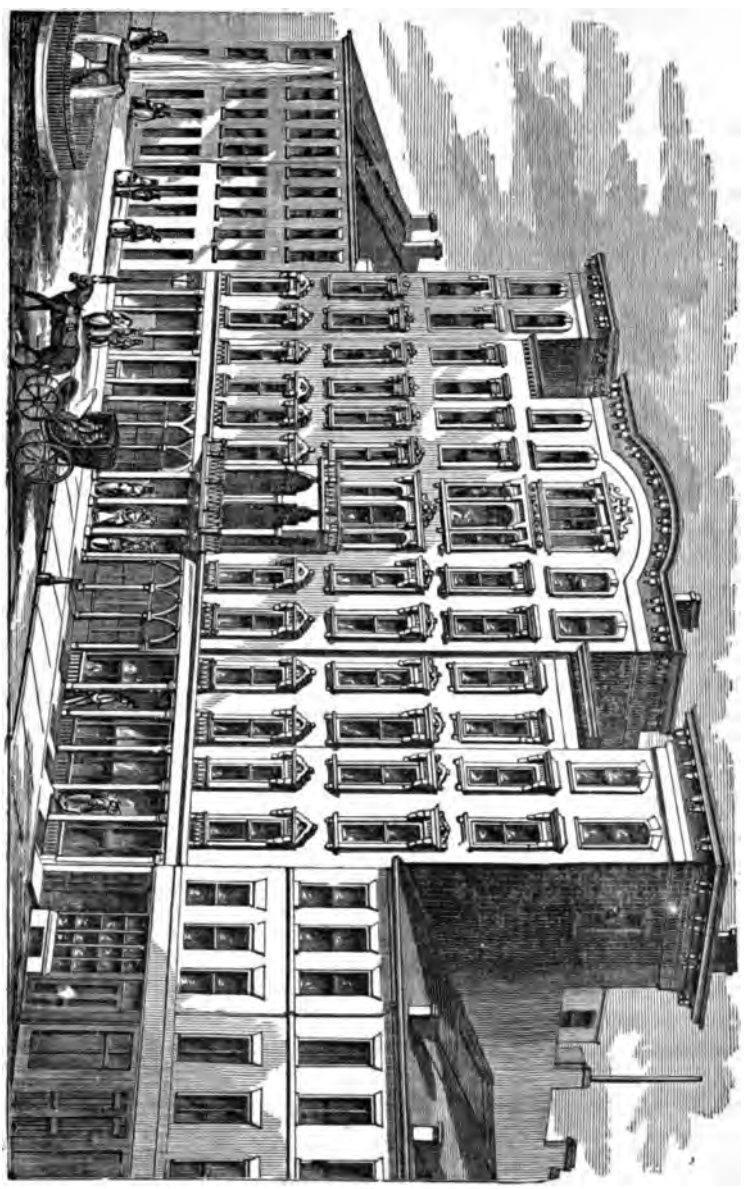
E. B. BIGGAR, Publisher,
Fraser Building, Montreal.

XXVI.

WESLEYAN LADIES' CO

Situated on King Street, facing the Gore, in th
city. This grand five story building, of a com
with Corinthian pillars, will attract the strang
more than common. Originally erected for
$110,000, it was found to be too large for the
a few enterprising citizens, and converted into a
first Ladies' College in Canada to prepare a re
degrees ; and although its success has caused th
still the best in the Dominion, in every respec
finest and most extensive Ladies' College with
building contains over 150 rooms, besides ma
rooms, dining room, 70 x 40, and several bath r
halls wide. Gymnasium and play grounds insu
conducive and necessary to recreation and h
it has had a noble career, having educated betw
young ladies. Its graduates in the regular li
two hundred. It has drawn its pupils from eve
from nearly every State in the American Union
comprehensive, embracing literature, science,
and modern. It has special advantages in musi
Its faculty includes about twenty highly accom
and is presided over by the Rev. A. Burns, D.
much of its history, it was presided over by the
Superintendent of the Methodist Church of
succeeded him ten years ago, is an experience
for years over the faculty of a university, and
life to lecturing and teaching. As the head of
principal is exceedingly popular, and the su
efforts is a source of extreme satisfaction to th
have so wisely devoted their means to the goo
not be omitted in this brief notice, that i
College is denominational its doors are open t
pupils belong to all religions. Higher educati
sole aim of the institution, and while the stri
conduct of the pupils by Mrs. Burns and her a
convent-bound or biassed by creed or theory. C
and useful is the one aim of the College, and
performance of its work is none too good.
Directors consist of the following gentlemen :

HON. W. E. SANFORD, I
JOSEPH LISTER, Esq.,
A. BURNS, D. D., LL. D.,



WESLEYAN LADIES' COLLEGE, HAMILTON.

XXVIII.

UNIVERSITY OF MOUNT ALLISON, SACKVILLE, N.B.

The University of Mount Allison College with its associate schools constitute one of the most complete and thorough of the many fine educational Institutions of Canada. The University building i a handsome edifice of red and olive sand-stone situated in the cen tre of spacious grounds, and commanding a splendid view of the sur rounding country. Besides the various lecture rooms and chemica laboratory this building comprises apartments for Library, Museum and Chapel. The latter is a neat audience room, with five stained memorial windows and arched roof. To the left of the University building and at right angles to it rises "the Lodge," a building o three stories for the residence and dormitories of the University stu dents. The Ladies College, a four-story building 160 feet long and 60 feet wide, crowns an eminence to the right of the University and about five hundred yards distant. From the roof of this build ing portions of four counties in the Province of New Brunswick and Nova Scotia may be seen, while in the immediate fore-ground stretches away for miles a luxuriant meadow, level as the ocean, one of the finest expanses of rich alluvial deposit to be found in the world. Near the Ladies College is Lingley Hall, a building of Grecian architecture, with facade supported by well proportioned Ionic columns. This building is used chiefly for Convocation and other public gatherings. On the opposite side of the street on a gentle eminence, facing the University and the Ladies' College, is situated "the Academy" and "the Commercial College," designed as a prepar atory and business school for boys and young men. A well-equipped gymnasium, ball courts, &c., complete a group of buildings admirably adapted for the purposes to which they have been dedicated.

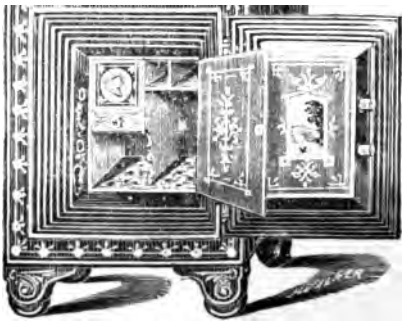
The Mount Allison Institutions were founded by the late Charles F. Allison of Sackville, in 1843. The Ladies' College was opened in 1854 and the University in 1862. The staff of instruction in the united Institutions numbers about twenty-five. The annual attendance of students is about 250. The courses of studies are extensive, and the methods of instruction systematic and thorough. Many of the most prominent public men of the Maritime Provinces have been educated at Mount Allison. The first President was the Rev. H. Pickard, D.D. He was succeeded by D. Allison, Esq., LL.D.; now superintendent of education in the Province of Nova Scotia. The present incumbent is J. R. Inch, Esq, LL.D., who was elected to he presidency in 1878.

XXIX.

HAMILTON PROVIDENT & LOAN SOCIETY.



One of the most prominent and important institutions in the city is "The Hamilton Provident & Loan Society," the largest and most prosperous loan company in this part of the Province. It was instituted in 1871 with a subscribed capital of $250,000 and $100,000 paid up. Its subscribed capital is now a million and a half, with eleven hundred thousand paid up. Its borrowed capital is over two million two hundred thousand dollars, of which about one million and thirty-five thousand is represented by debenture bonds held in England. Its local savings bank department contains nearly a million dollars deposits, although the rate of interest now paid is only three per cent., shewing the public confidence in the stability of the institution. Its total assets are in round figures, three million, six hundred thousand dollars, and these are all invested upon mortgage on real estate valued at seven million, three hundred thousand dollars. In 1885 the Dominion Parliament passed an act (48 Vic., cap. 30) entitled "*The Hamilton Provident & Loan Society Act of* 1885," in which the borrowing and other powers of the company are consolidated. Amongst other provisions in said Act, the society is authorized, in addition to their power to borrow upon debenture bonds payable on the expiry of a term of years, to issue perpetual debenture stock bearing a fixed dividend—a power and privilege not then possessed by any other loan company in the Dominion. The society's financial agents in London have issued a portion of this stock with a fixed dividend of four per cent., payable in London, half-yearly, and as this stock is practically guaranteed (being secured by the company's paid up capital, as well as $100,000 of subscribed but unpaid stock, and $215,000 reserves), it will no doubt become a favorite investment with capitalists. In 1881 the Society erected in the city of Hamilton a magnificent cut-stone Head Office building, which is one of the most imposing and beautiful architectural structures in Ontario. The progress of the society has been steady and marked since its incorporation. The Board of Directors is composed of eight members, and it includes amongst these the most successful and wealthy merchants in the city. President Geo. H Gillespie; A. T. Wood, Vice-President; Treasurer, H. D. Cameron. The London Financial Agents are Messrs. Borthwick, Wark & Co., Throgmorton Street, and the Bank of Scotland: and the Scotch Agents are Messrs. Gillespie & Paterson, Writers to the Signet, Edinburgh.



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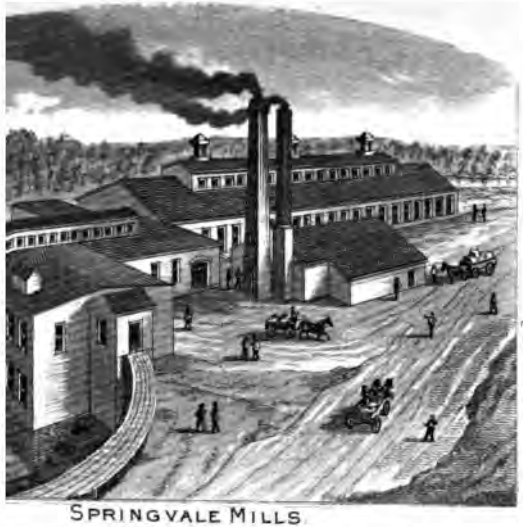
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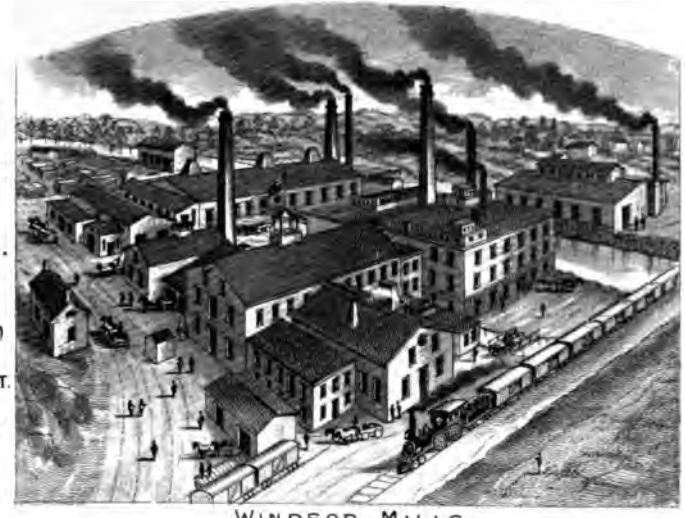




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XL.

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ingenuity, but was brought up in the business almost from infancy, his father before him having been in the trade in Germany, while his four sons inherited their father's qualities and followed in his experience. The result of this extended experience has been the production of several important improvements in pianos possessed by this firm alone. The Heintzman pianos have been so popular throughout Canada that for the second or third time the firm have had to increase their capacity. They are now erecting a large new factory at West Toronto Junction, the main building being 200 feet long and four stories high. Messrs. Heintzman & Co. have taken many high honors at celebrated exhibitions and fairs, among which were a medal and diploma at the Centennial Exhibition, and at Sydney, N. S.W. They showed several of their instruments at the Colonial and Indian Exhibition in London in 1886. The result was that their pianos have become known far beyond the bounds of the Dominion, 83 of these instruments being sold at that great exhibition. Sir Charles Tupper's official report, published as a Dominion blue book, referred to their exhibit as follows:

"Among these were Messrs. Heintzman & Co., of Toronto, who exhibited five upright and two grand pianos, remarkable for important improvements, notably in their action, which is simple and not liable to derangement. These pianos were very highly commended, and some of them realized high prices. A good English and continental connection is anticipated by Messrs. Heintzman & Co., who sold 83 instruments during the Exhibition, and who had the opportunity of establishing an agency for sale on consignment had they thought proper to do so."

The *Piano, Organ and Music Trades Journal* alluded to their exhibit in these terms: "Messrs. Heintzman & Co's exhibit at the Colonial and Indian Exhibition is creating quite a sensation amongst the Musical Profession of London and the Continent. Every one seems to be astonished to see such beautiful pianos as these manufactured in Canada. The power and quality of tone throughout the whole scale is really beautiful. The touch is also light and sympathetic, and Canada can well be proud of being able to produce such fine instruments as these." Arthur L'Estrange, gold medalist of the Paris Conservatory of Music, who selected one of these instruments for his concerts in the Royal Albert Hall during the exhibition, said that "for purity and brilliancy of tone and elasticity of touch it could scarcely, in my opinion, be equalled and certainly not surpassed." Dan Godfrey, the famous composer and bandmaster, and many other eminent English musicians, spoke in similar flattering terms of the Heintzman pianos. The illustrated catalogue published by this firm, at their office, 115 and 117 King street West, Toronto, gives much information of interest to piano users and buyers.

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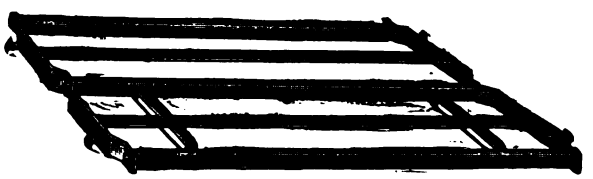
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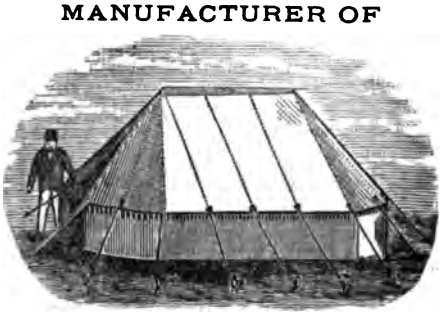
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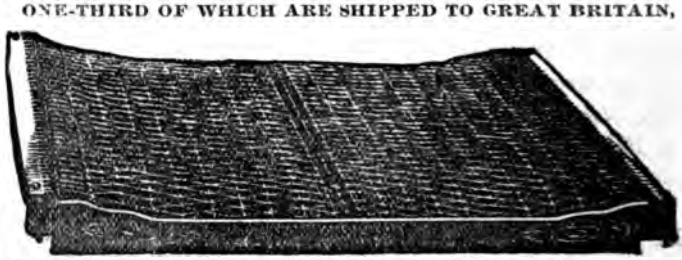
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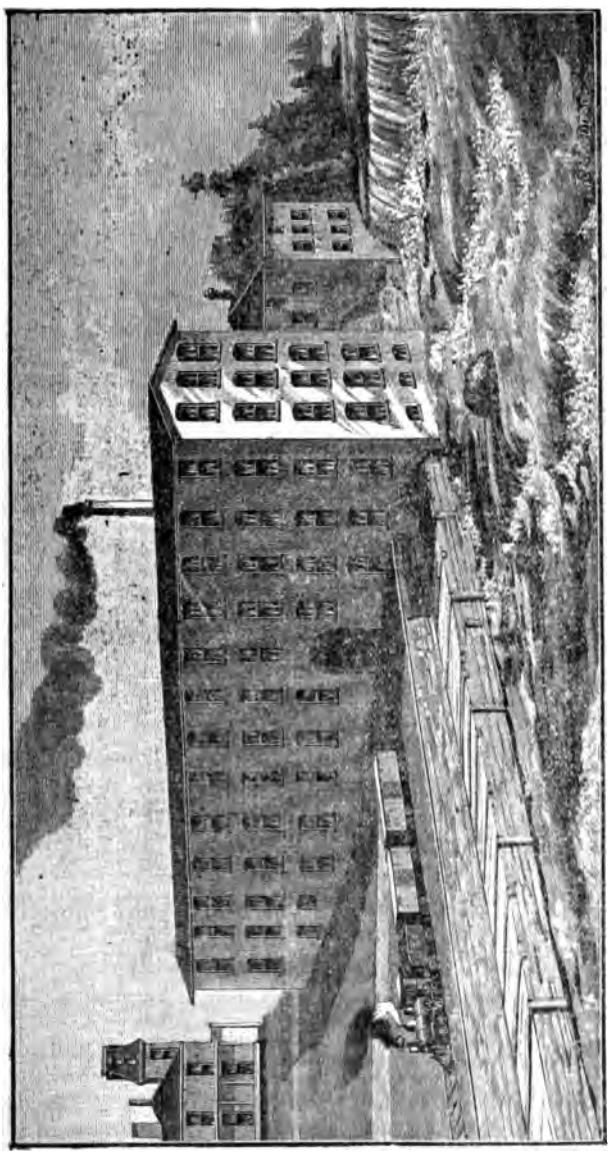
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